Vision

Reference Manual

OPCODE

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Vision Reference Manual

Opcode Systems, Inc.
3950 Fabian Way, Suite 100
Palo Alto, CA 94303

Opcode Part Number: 110-0204-03

Program by: Dave Oppenheim, Ray Spears, David Willenbrink, Andy Wolpert, Doug Wyatt, Dave Scoggin, Larry Gerndt, and David Zicarelli

Manual by: Christopher F. Brown with Gregory A. Simpson, David Willenbrink, and Dave Oppenheim

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PART 1: The Vision Encyclopedia

CHAPTER 1: Introduction to the Vision Reference Manual

❑ About the Vision Reference Manual

Vision is a professional MIDI sequencing tool for the Macintosh. You can record, edit, and play back any number of sequences in a Vision file. Vision requires the OMS system extension to communicate with MIDI devices. For more information on Vision features and OMS, see *Chapter 1: Introduction* in the book *Vision Tutorials*.

This manual is the main reference manual for using Vision. There are some assumptions we have made in this manual:

- You have already installed Vision and OMS.
- Your music hardware is properly set up.
- You have a basic understanding of Vision, as described in *Getting Started with Vision* (included in the Vision package).
- You have a basic understanding of MIDI technology.
- You have a basic understanding of the Macintosh.

❑ How to Use This Book

This book is divided into three parts:

- *Part 1: The Vision Encyclopedia* contains articles that describe how to use Vision. This information is organized by category. When you need to know how to perform a particular task, turn to this section.
- *Part 2: Vision Windows* contains a description of each main window and the objects in the window.
- *Part 3: Vision Menus and Dialogs* contains a description of each menu item and dialog that you will encounter while using Vision.

CHAPTER 2: Seeing Your Way Around Vision

This chapter is a synopsis of Vision navigational techniques.

Like most Macintosh applications, many Vision windows contain scroll bars so you can navigate through information. You can select many items in the normal Macintosh way—by clicking on them with the mouse. As you might imagine, you can change many values by highlighting the field and typing a new value, then typing return or enter (invalid values will not be accepted).

There are also some navigational techniques that are unique to Vision—dragging the mouse within a numeric field to change a value, for example. This chapter concentrates on these types of techniques.

❑ Selecting Items with Selector Dots

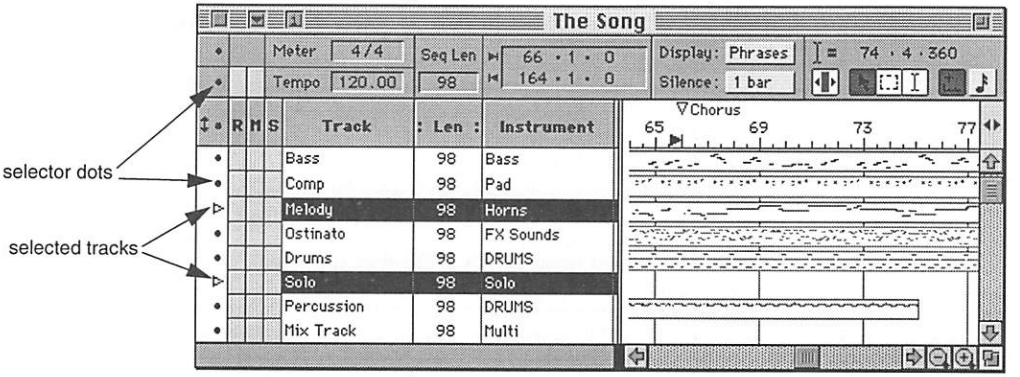


Figure 2.1: To select or double-click a track or sequence, you must use the selector dots

When you need to select a line item in a window (most notably, a track or sequence), click on the selector dot in the left column of the window. A selected dot will change into a triangle, and the item will highlight.

You can select multiple tracks or sequences by:

- dragging over multiple selector dots.
- holding down the command or shift key on your Macintosh keyboard while you click selector dots.

To de-select a selected line item, either select a different item or hold down the command key on your Macintosh and click the selected triangle.

In the Sequences window, you can also de-select all items by clicking in the header.

❑ Moving Items with the Move Cursor

To the left of each selector dot is an area that allows you to drag the line item to another position in the window. When you move the cursor over this area, it changes to a ↕—you can then drag the line item to a new location. This does not change your MIDI information—it only changes the position of your tracks, sequences or instruments in their respective windows.

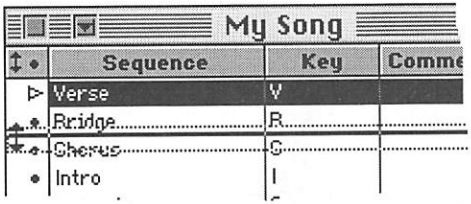


Figure 2.2: Dragging a Sequence in a Sequences Window

When you change the position of tracks in the Tracks window, you will also change the relative position of these tracks in the Notation and Print Preview window. See "The Print Preview Window" on page 93 for more information on changing the print parameters.

If you have more than one item selected, you can drag all the items to the same new location while keeping their relative order.

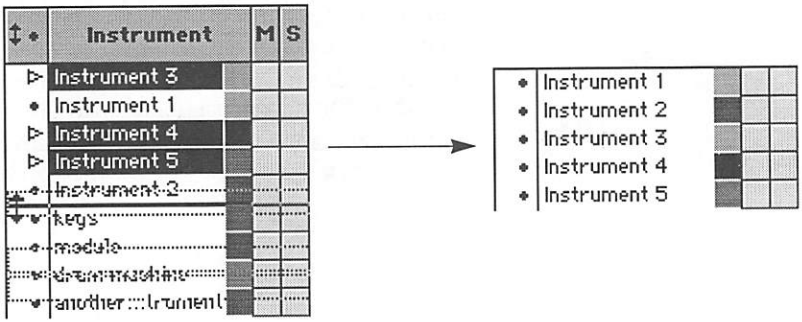


Figure 2.3: Dragging Multiple Instruments in the Instruments Window

❑ Zooming

"Zooming" will allow you to view your music in different sizes. At small sizes, you can fit more music in a window. At large sizes, you can see your MIDI data in better detail.

Using the Zoom Buttons

There are zoom buttons in many editing windows.

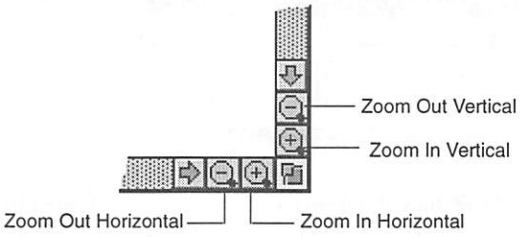


Figure 2.4: Zoom Buttons

Zooming out horizontally will let you see more bars; zooming out vertically will let you see more of the MIDI pitch range.

- Click a Zoom In/Out button to zoom in or out incrementally.
- Option-click a Zoom In button to zoom all the way in for either the vertical or horizontal axis.

  Option-click a Zoom Out button to fit the entire track contents in the window for either the vertical or horizontal axis.
- Shift-click a Zoom In/Out button to fit the current selection in the window for either the vertical or horizontal axis.

Using Zoom to Fit and Zoom Back

When you are editing MIDI data, you can show the entire track by choosing **Zoom to Fit** from the Edit Window submenu. When you are working in the Tracks window, this will show you the entire sequence (all the tracks).

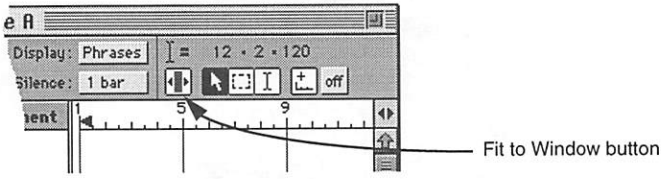
Figure 2.5: Choosing Zoom to Fit from the Edit Window submenu

Choose **Zoom Back** from the Edit Window submenu to go back to the previous zoom settings.

Keyboard Equivalent: You can type option-Z on your Macintosh keyboard rather than choosing Zoom to Fit from the Edit Window menu. To Zoom Back using the keyboard, type option-B.

Using the Fit Selection to Window Button

Various edit windows contain this button; use it to quickly make the current selection or track fit in the active window.



- Click the **Fit Selection to Window** button to fit the current selection into the active edit window.
- Option-click the **Fit Selection to Window** button to fit the entire track into the active edit window (or, in the Tracks window, fit the entire sequence into the Track overview area). This is the same as choosing **Zoom to Fit** from the Edit window pop-up (or typing option-z).

Zooming Using the Option Key

In the Track Overview, Graphic, and Notation windows, you can use the mouse and option key to zoom in and out.

Option-Drag to Zoom In

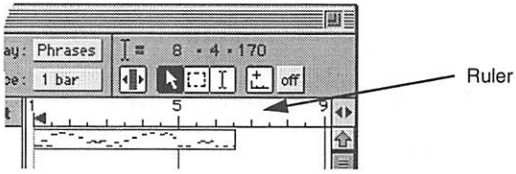
The quickest way to zoom in on a selection is to hold down the Option key (the cursor will turn into a little magnifying glass) and drag over the events you want to see closer.

There are three ways to option-drag:

- Zoom in on an area

  To zoom in on a selection, option-drag a marquee around the area you wish to see in more detail.
- Horizontal Zooming in the ruler

  To zoom into a particular range of bars, option-drag across them in the ruler.



- Vertical Zooming in the left margin

  To change the vertical scale in Graphic and Notation windows, option-drag in the left margin.

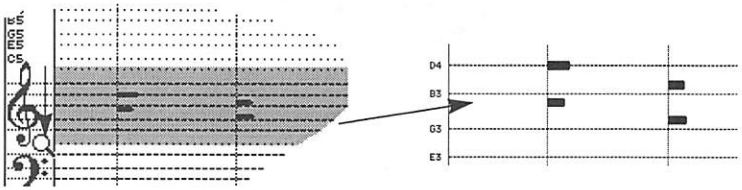


Figure 2.6: Option-dragging in the left margin will change the vertical scale of the window.

Option-Click to Zoom Out

The quickest way to zoom out is to hold down the Option key and click without moving the mouse. This will zoom out the display one step.

You can also option-click the ruler to zoom out horizontally, or option-click in the left margin to zoom out vertically.

❑ Hand Scrolling

In the Graphic and Notation windows, you can change what part of the window is displayed by using the hand cursor. This is helpful when you want to center a selection for better viewing. To use the hand cursor:

1. **Activate either the Graphic window or Notation window, then position the cursor over the display area of the window.**
2. **Press and hold down the Option and Shift keys on your Macintosh keyboard.**

   The cursor will change to the Hand cursor.
3. **Drag the window contents to the desired position.**

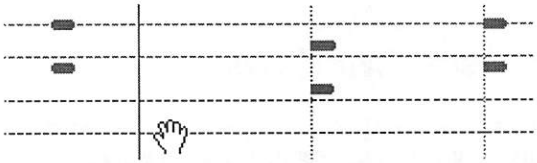


Figure 2.7: Use the Hand cursor to move the contents of a window.

❑ Listening With the Command Key, or "Scrubbing"

In the Track Overview, Graphic, and Notation windows, you can use the mouse and command key to listen to your music.

1. **With the cursor over an Edit window display area, press the command key.**
   The cursor will change into a speaker.
2. **Position the speaker over the area you want to hear and click the mouse.**
   A vertical line will appear. This shows you the notes you are hearing.

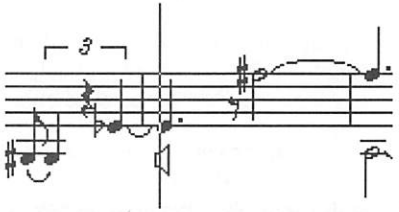


Figure 2.8: Use the command key to listen to visible MIDI data

3. **Move the speaker forward or backward.**

❑ Accessing Vision Windows

There are several ways to access Vision windows. First, the **Windows** menu give you access to most of Vision's most frequently used windows. For more information, see *Chapter 31: The Windows Menu.*

Double-clicking tracks in a Tracks Window

To Open a Graphic window, double-click on a track in the Tracks window. If the track is empty, double-clicking will open a List window. You can also Option-double-click to open a List window.

You can also double-click a block in the Track Overview section of the Tracks window to open a Graphic window of the block. Option-double-click to open a List window.

Control Bar Window Buttons

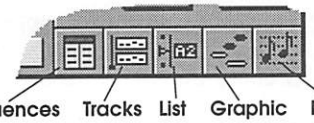


Figure 2.9: The Window buttons are in the lower-right corner of the Control bar

If you click one of these buttons, Vision will open the corresponding window, or bring the window to the front and make it active if it is already open.

Control Bar Icons

There are several icons on the Control Bar. Double-clicking these icons will open appropriate windows:

Double-click this icon:	To open this window:
Seq	Tracks window for current sequence
Trk	List or Graphic Edit window for current track (Option-click always opens a List window.)
	Instruments window (This icon is also present in the List and Graphic windows.)
	Program Names for Thru Instrument
	Tempo Track
	Meter Track
	Meter Track (includes markers)

Open Windows Pop-up

The Open Windows Pop-up shows all currently open windows, and you can bring any window to the front by choosing it from this pop-up. The Open Windows pop-up is available at any time, anywhere in Vision:

1. **Hold down the Command and Option keys on your Macintosh keyboard.**
2. **Click anywhere and hold the mouse button.**
   The Open Windows Pop-up will appear:

Figure 2.10: The Open Windows Pop-up gives you access to every Open window in Vision. Choosing a window from this menu will make it the active window.

Setting the Default Window Location

For most windows, Vision maintains window locations and sizes. For example, the Control Bar and Instruments windows re-open where they were the last time they were closed.

Other window positions are saved in each file—the Sequences, Tracks, Graphic, List, and Notation windows will maintain their sizes for each track or sequence.

You can set the default location for each of these windows. When Vision opens a new window of this type, it will open in this location and size.

To set the default window location:

1. **Position a window that is the type you wish to set the default.**
   For example—if you wish to set the default position for Notation windows, position a Notation window.
2. **Choose Set Default Location from the Window menu pop-up.**

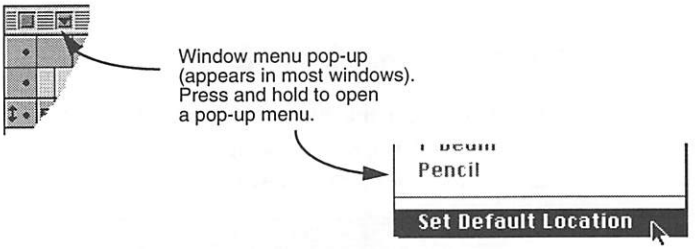


Figure 2.11: Choosing this menu item will set the default location for the window

Closing Windows

You can close windows by clicking the close box in the upper left-hand corner, or by choosing **Close Window** from the **File** menu. You can also type command-W on your Macintosh keyboard.

The Control Bar cannot be closed.

❑ Sequence Select Pop-up

While you are using Vision, you will frequently want to change the current sequence or track. Rather than opening a new Edit window each time, you may want to use the Sequence Select Pop-up. This will allow you to change the current sequence or track in the same window.

Changing Sequences in a Tracks Window

1. **Option-click the title bar of the Tracks window.**
   The Sequence Select Pop-up will appear.
2. **Choose another sequence from the pop-up menu.**

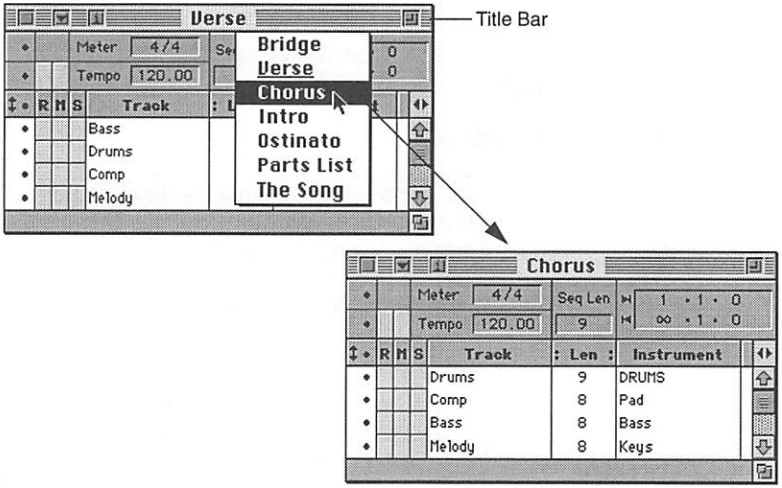


Figure 2.12: Option-click the title bar of the Tracks window to switch to a different sequence in the same window and view settings.

❑ Track Select Pop-Up

In the Graphic and List windows, the Track Select pop-up works in the same way as the Tracks window, only it allows you to switch tracks rather than sequences.

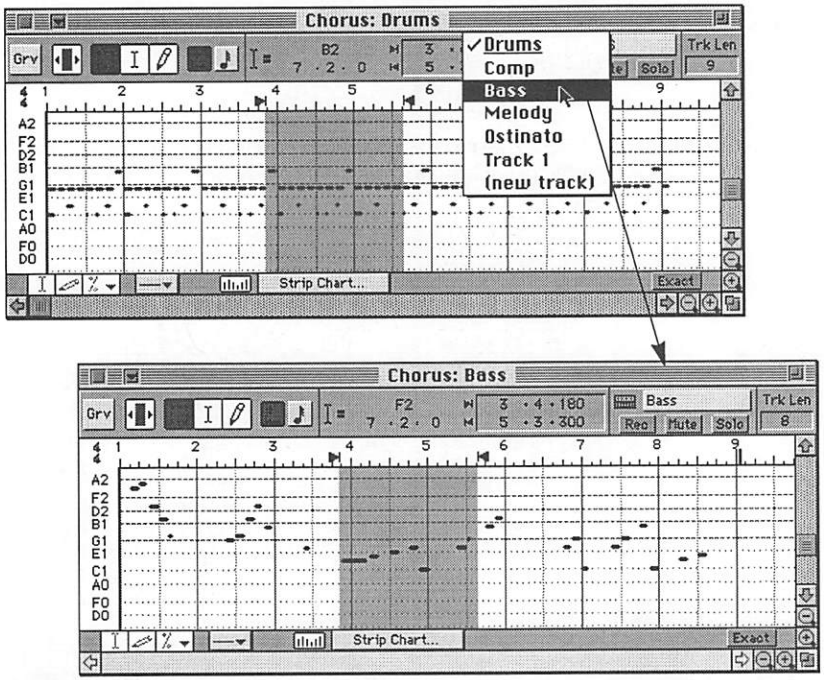


Figure 2.13: Option-click the title bar of the Graphic or List window to switch to a different track in the same window and view settings.

When you are in a Graphic or List window, you can also add a new track from this menu. Choose (**New Track**) from the Track Select pop-up.

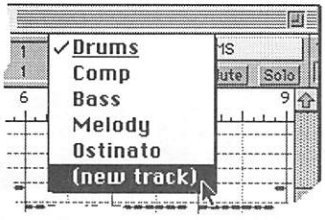



Figure 2.14: From the Graphic or List window, you can choose to create a new track without returning to the Tracks window.

In the List window, you can also view the tempo track or meter track from this pop-up menu.

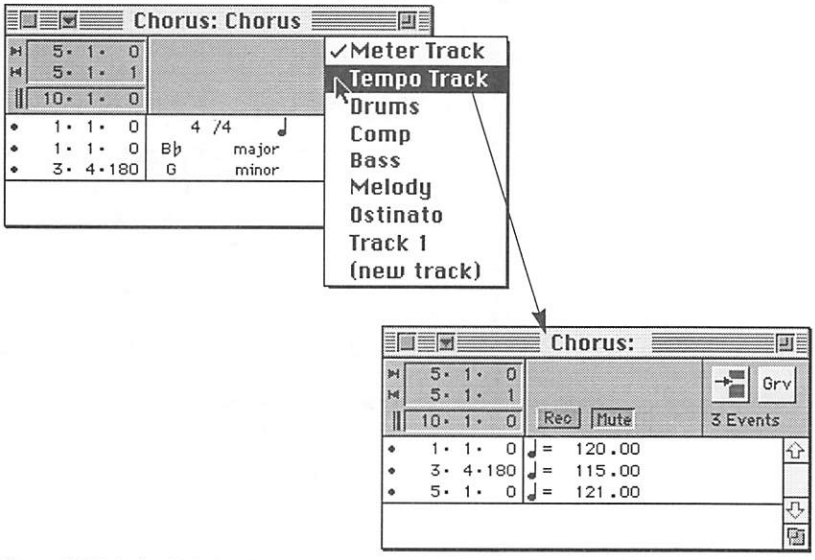


Figure 2.15: In the List window, you can view the tempo or meter track by option-clicking in the title bar.

Showing and Hiding Tracks in a Notation Window

The Track Select pop-up is a similar menu in the Notation window, but it allows you to show and hide tracks in the current window, not change the current track.

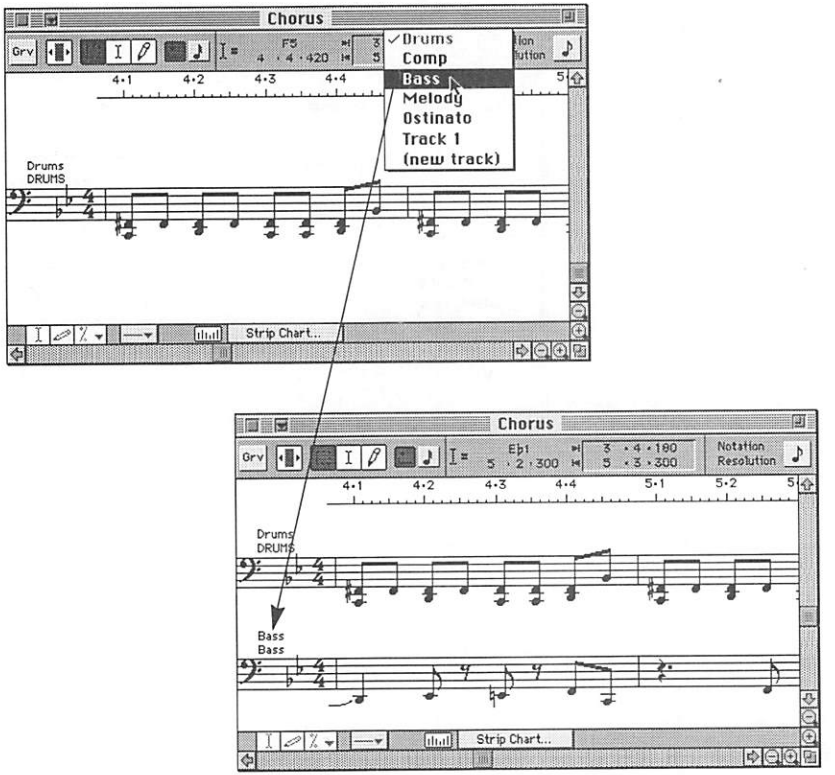


Figure 2.16: In the Notation window, option-clicking on the title bar will let you show and hide tracks.

If a track is currently shown in the Notation window, it is checked in the Edit Window pop-up. To hide a showing track, choose it from the menu. If there is only one track showing, it is greyed out in the menu—you cannot have an empty Notation window.

If you want to change the order of tracks, move the track in the Tracks window (see "Moving Items with the Move Cursor" on page 7).

❑ Moving Dialog Boxes

If you use a particular dialog box frequently, you may want to change its position:

1. **Open the dialog box you wish to move.**
2. **Option-drag a white area of the dialog box.**

   You can move the dialog box anywhere on the screen, and Vision will remember where you dragged it. This does not work with every dialog box.

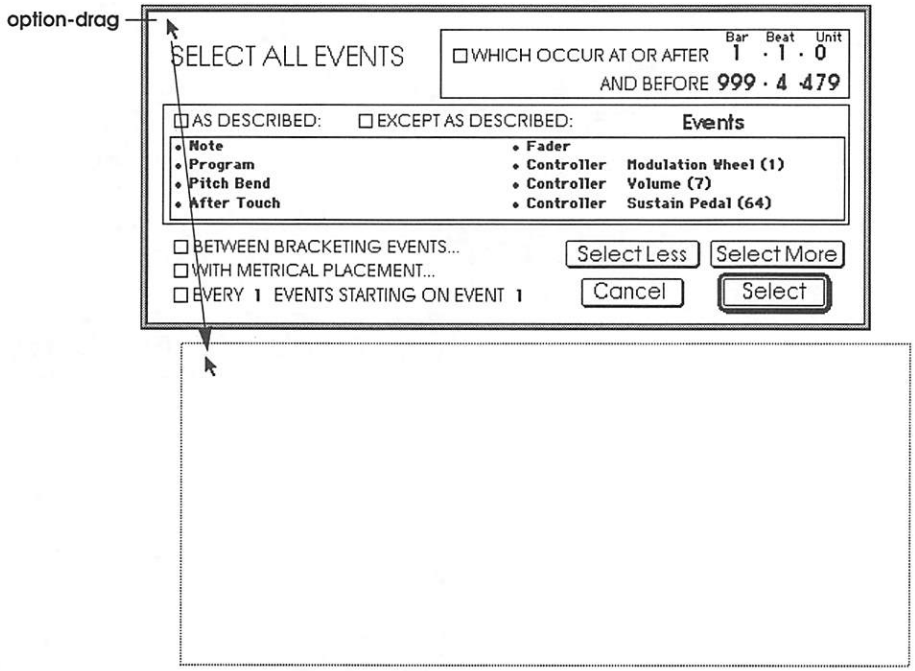


Figure 2.17: Unlike many Macintosh applications, you can move many Vision dialog boxes by option-dragging a white area.

❑ Changing Values with the Mouse

You can change many values by clicking in the field and dragging the mouse up or down. Holding down the mouse for a few seconds will cause the value to change at a faster rate. The cursor will change to an arrow that reflects the direction of change.

Figure 2.18: Using the Mouse to change values

You can also change some values by using your mouse as a "slider." To change values this way, click a value then drag vertically. The cursor will disappear while the value is changing and then reappear when you release the mouse button.

❑ Changing Values with a MIDI Controller

In some cases you can highlight a MIDI value (such as a MIDI note or velocity values) and use your MIDI keyboard to enter a new value. This works well in the List window, or when you are setting a note to use for the metronome sound.

Figure 2.19: You can change some values by highlighting them and striking a note on your MIDI keyboard.

❑ Using the Macintosh Keyboard

You can perform many operations using Macintosh keys rather than using menus, dialog boxes, or the mouse. There is a quick reference card in your Vision package that lists these equivalents.

Using the Numeric Keypad

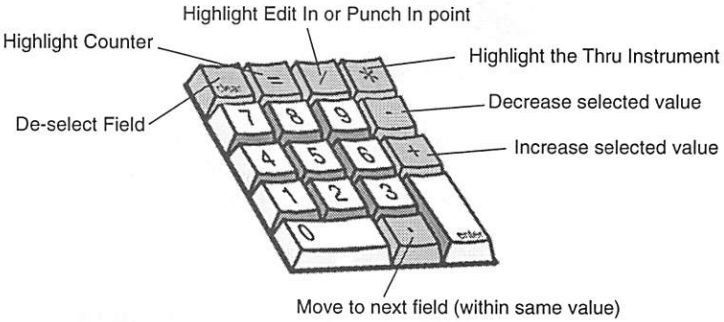

Highlight Edit In or Punch In point
Highlight Counter
Highlight the Thru Instrument
Decrease selected value
De-select Field
Increase selected value
Move to next field (within same value)

Figure 2.20: A diagram of some keypad equivalents.

You can use the numeric keypad to highlight different Vision parameters, then set the value of these parameters using the numeric keypad. Typing the enter key will then accept the new value.

Moving to the Next Field

You can move to different fields within a window by pressing the arrow keys on your Macintosh keyboard. Some fields—like time locations—have multiple values. You can use the decimal on the numeric keypad to move to the different values within a single field:

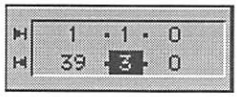


Figure 2.21: You can navigate within a time location field by using the decimal key

In this example, repeatedly pressing the decimal will sequentially highlight the three fields associated with the Edit Out point.

Transport Control Keyboard Equivalents

Here are the keyboard equivalents for each of the main transport controls. For a description of each control, see "Transport Controls" on page 147.

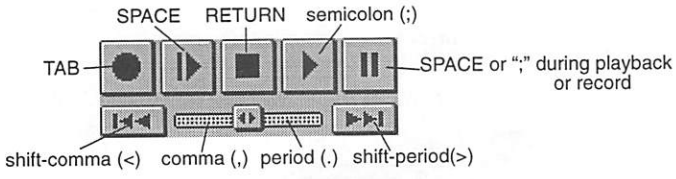


Figure 2.22: Transport Control Key Equivalents

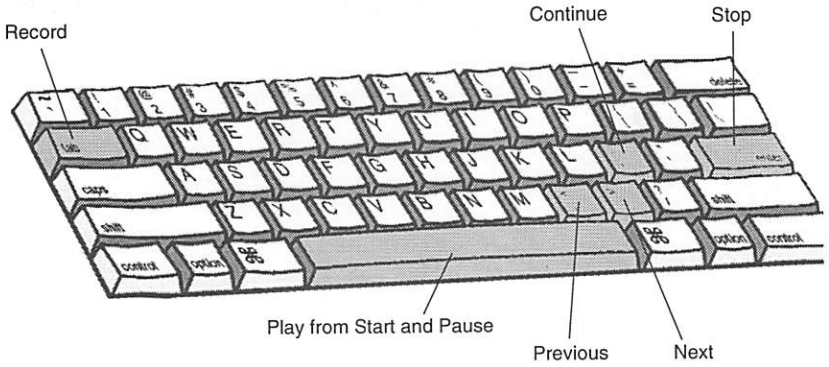


Figure 2.23: Macintosh Keyboard Equivalents for the Transport Controls

Defining a Selection Using the Numeric Keypad

When an Edit window is active, you can use the numeric keypad to set the time selection:

1. **Type the slash (/) on your Macintosh numeric keypad.**
   If the Control Bar is active, this will highlight the Punch Points—make sure an Edit window is active.
2. **Use the keypad numbers to enter the bar number. You can also use the plus (+) and minus (-) keys.**
3. **To highlight the beat number, press the decimal on the keypad.**
4. **To highlight the unit number, press the decimal again.**

For more information on the current selection, see page 166.

Changing the Thru Instrument Using the Numeric Keypad

You can use the numeric keypad to change the current thru instrument:

1. **Type the asterisk (*) on your Macintosh numeric keypad.**
2. **Use the keypad numbers to enter the number of the instrument you wish to make current. You can also use the plus (+) and minus (-) keys to scroll through the instruments.**

   You can view the Thru Instrument field in the Control Bar while you are setting it:

Figure 2.24: The Thru Instrument field contains a dot next to the Instrument until you press enter.

3. **Type Enter to set the instrument.**

For more information on the Thru Instrument field, see "Thru Instrument" on page 144.

Changing the Thru Instrument Using Command-Keys

There are two ways you can use the keyboard to change the Thru Instrument: using command-key combinations, and using the numeric keypad.

You can change the Thru Instrument by holding down the command key (sometimes with the option key), then typing numbers Macintosh keyboard.

For a list of these combinations, hold down the option key and click the Instrument pop-up on the Control Bar:

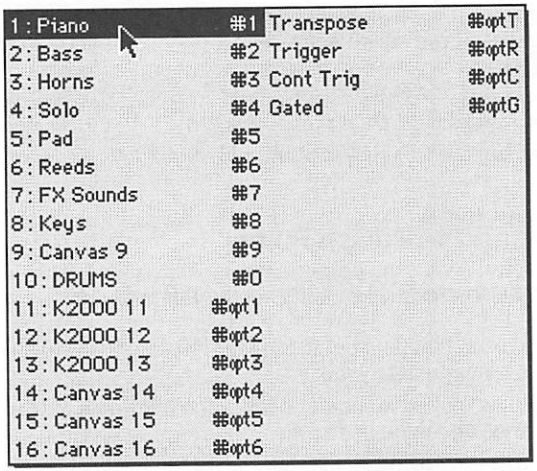

1 : Piano ⌘1 Transpose ⌘⌥T
2 : Bass ⌘2 Trigger ⌘⌥R
3 : Horns ⌘3 Cont Trig ⌘⌥C
4 : Solo ⌘4 Gated ⌘⌥G
5 : Pad ⌘5
6 : Reeds ⌘6
7 : FX Sounds ⌘7
8 : Keys ⌘8
9 : Canvas 9 ⌘9
10 : DRUMS ⌘0
11 : K2000 11 ⌘⌥1
12 : K2000 12 ⌘⌥2
13 : K2000 13 ⌘⌥3
14 : Canvas 14 ⌘⌥4
15 : Canvas 15 ⌘⌥5
16 : Canvas 16 ⌘⌥6

Figure 2.25: Option-click the Instrument pop-up for a list of command-key equivalents for setting the Thru Instrument

Setting the Counter

To use the keypad to change the counter:

1. **Type the equal sign (=) on your Macintosh numeric keypad.**
2. **Use the keypad numbers to enter the bar number. You can also use the plus (+) and minus (-) keys.**
3. **To highlight the beat number, press the decimal on the keypad.**
4. **To highlight the unit number, press the decimal again.**

For more information on the counter, see "The Counter" on page 153.

Setting the Punch Points to the Current Selection

You can set the punch points based on the current Edit Points by typing the brackets on your Macintosh keyboard. When Vision is playing, this will set the punch point to the counter location:

1. **To set the Punch In point to the Edit In point (or the counter), type [.**
2. **To set the Punch Out point to the Edit Out point (or the counter), type].**

Clearing the Punch Points

You can clear the punch points by shift-typing the brackets on your Macintosh keyboard:

1. **To clear the Punch In point, type SHIFT-[.**
2. **To clear the Punch Out point, type SHIFT-].**

Manually Setting the Punch Points

To use the keypad to manually set the Punch Points:

1. **To set the Punch In point, type the equal sign (=) followed by the slash (/) on your Macintosh keypad.**
2. **Use the keypad numbers to enter the bar number. You can also use the plus (+) and minus (-) keys.**
3. **To highlight the beat number, press the decimal on the keypad.**
4. **To highlight the unit number, press the decimal again.**
5. **To set the Punch Out Point, press the down arrow on your Macintosh keyboard. You can also type the backslash (\).**

Toggle Vision Modes

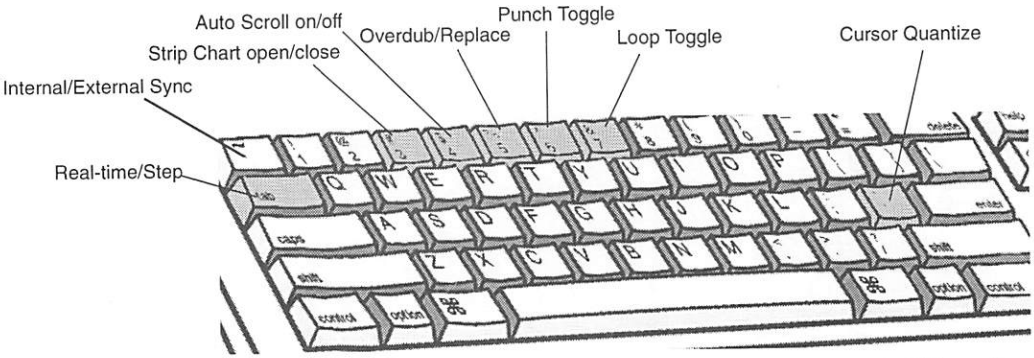


Figure 2.26: Hold down the shift key and type one of these keys to toggle Vision settings

There are several modes of operation in Vision. You can use the keyboard to toggle between several display and performance modes—for more information on each mode, see the page number in the parenthesis:

- **Strip Chart** (page 63)

  Type **Shift-3** to open and close the Strip Chart in the Notation and Graphic windows.
- **Auto Scroll** (page 175)

  Type **Shift-4** to turn Auto Scroll on and off.
- **Overdub/Replace** (page 29)

  Type **Shift-5** to toggle between overdub and replace recording. This will not affect the real-time/step aspect of the record mode.
- **Punch on/off** (page 40)

  Type **Shift-6** to click the Punch toggle.
- **Loop on/off** (page 37)

  Type **Shift-7** to click the Loop toggle.
- **Real-time/Step recording** (page 29)

  Type **Shift-TAB** to toggle between step recording and real-time recording. This will not affect the overdub/replace aspect of the record mode.
- **Cursor Quantize** (page 89)

  Type **Shift-quote** to turn cursor quantize on and off.
- **Internal/External Sync**

  Type Shift-backquote ("`") to toggle between Internal and either External or Timecode sync (whichever you used last).

CHAPTER 3: Recording MIDI Data

❑ Record Modes

MIDI Recording falls into two general categories—*real-time recording* and *step recording*. In real-time recording, Vision records your music as you perform it. In step recording, you enter each MIDI event individually.

There is also a distinction between *replace* and *overdub* recording. In a replace mode, Vision will erase any portion of the track where you are recording. In overdub recording, Vision will add the existing data to your new data.

Using these two distinctions, you can see that Vision offers four possible record modes:

- **Replace** will erase the length of the existing track data that you record in real-time.
- **Overdub** will keep the existing track data—during real-time recording, you add your performance to the MIDI data already in the track.
- **Step Replace** will erase the existing track data while you step record.
- **Step Overdub** will keep the existing track data while you step record.

Record Modes	Will replace existing data	Will mix new data with existing data
Real-time Recording	Replace	Overdub
Doesn't record in real-time	Step Replace	Step Overdub

In either real-time record mode, you can invoke loop recording (see page 37) or punch recording (see page 40). You can also use punch recording during step recording.

You set the Record Mode by using the Record Mode pop-up in the Control bar:

Figure 3.1: Choosing the record mode

Record Mode Keyboard Equivalents:
To toggle between step record and real-time record, type **SHIFT-TAB** on your Macintosh keyboard. This will not affect the overdub/replace setting of the record mode.

To toggle between replace and overdub modes, type **SHIFT-5** on your Macintosh keyboard. This will not affect the step/real-time aspect of the record mode.

For more information on the Record Mode pop-up, see "Record Mode" on page 142.

Real-Time Recording Basics

When you launch Vision (or create a new Vision file), you'll automatically start with one Sequence open and an empty track, ready to record. You can see this track is record enabled in the Tracks window.

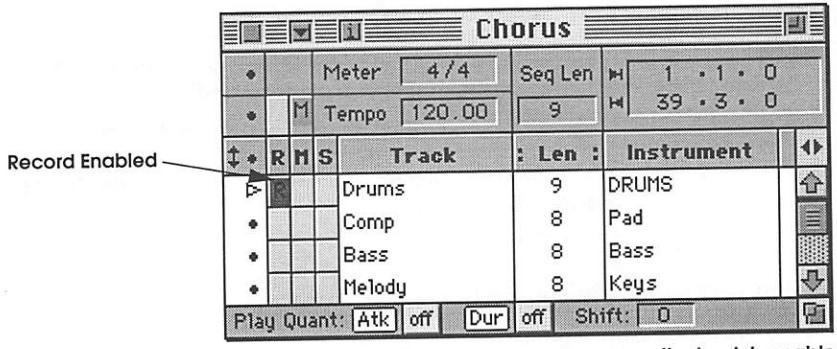


Figure 3.2: An "R" in the record column means the track is enabled for recording

Here is the general procedure for real-time recording:

1. **Decide what kind of Record Mode you want to use.**
   You can either replace the contents of the track, or overdub your new performance on existing material.
2. **If you are Punch recording or Loop recording, set the In and Out points.**
   You can see "Punch and Loop Controls" on page 157 for more information, or see "Loop Recording" later in this chapter.
3. **Set your metronome to the desired setting.**
   You can choose to disable the metronome, to click only during countoff, or other settings. See "Metronome" on page 373.
4. **If you want a countoff, set the countoff.**
   By default, Vision will wait for you to start playing before it records anything. If you want to have a countoff instead, set the countoff with the Begin Record toggle (see page 152).
5. **Select the desired Instrument from the Control Bar's Thru Instrument pop-up.**
   Alternately, you could select the desired Instrument from the Instrument pop-up column in the Tracks window— the Thru Instrument in the Control Bar will change to this Instrument when you record-enable the track.
6. **Record-enable the track on which you wish to record .**
   You can click the record column for the track (see Figure 3.2 on page 31).
7. **Click the Record button and record your new track.**

❑ Step Recording Basics

When you are in one of the step record modes, you will not record in real-time. Instead, you will program each MIDI event individually. You don't need to play in any particular tempo.

This is the general procedure for step recording:

1. **Decide whether you want to overdub your notes, or replace the information on the track you will record. Set the record mode accordingly.**
   Choose either **Step Replace** or **Step Overdub** from the Record Mode pop-up in the Control bar.
2. **If you desire, you can set the Punch Points to ensure that you will start and stop recording in a specified time period.**
3. **Enable the track you want to record.**
   You can click the record column for the track (see Figure 3.2 on page 31).
4. **Choose the instrument you want to use.**
5. **Click the Record button.**
   The Step Record window will appear.

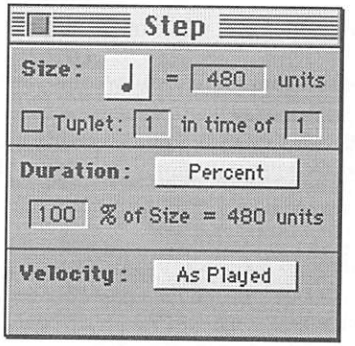


Figure 3.3: The Step Record window

6. **Set the parameters in the Step Record window to determine the size, duration, and velocity of the next note you will record.**
   These parameters are fully discussed in *Chapter 25: The Note Size Window* on page 283.
7. **Play a note or chord on your MIDI keyboard.**
8. **Repeat Steps 6 and 7 above until you have finished recording.**

9. **Close the Step Record window or Click the Stop button.**
   When you are finished Step Recording, you can also stop by performing an editing command in an edit window or moving a note. If you end step recording this way, you cannot undo the recording—choosing **Undo** from the **Edit** menu will undo the editing operation, not the step recording operation.

You can step record most types of MIDI data—notes, chords, program changes, and even subsequences. You will see your music in the edit windows as you step record.

You cannot use step recording to record pitch bends, aftertouch, or controller information. While you are step recording, you will not hear other tracks.

Step Recording Tips

Step Recording Chords

During step recording, Vision will recognize chords when you play all the notes in the chord simultaneously. If you would prefer to enter the notes in a chord one-at-a-time, you can hold down the sustain pedal while you enter notes. While the sustain pedal is held down, the counter will not advance and all notes will be recorded as a single chord, as if you played them all at once.

Sustaining Individual Notes

You can hold down one or more notes while step recording other notes—they will be sustained in the track through all the steps entered while they're down.

Deleting Notes

You can type the delete key (sometimes called the backspace key) on your Macintosh keyboard to erase notes. Each time you press this key, the last step will be erased, and the counter will move backward.

Entering Rests

Instead of entering a note from a MIDI controller, you can type the SPACE key on your Macintosh keyboard to advance the counter without entering any data. This will effectively enter a rest.

Step Recording Program Change Events

You can change the program from your MIDI controller and Vision will store the program change event. Alternatively, you can choose a new program from the Program pop-up in the Control Bar and record a program change.

The counter will not advance when you record program change events.

Step Recording Subsequences

If you type the key combination you have assigned to a sequence, Vision will record the sequence as a subsequence in your track. In this case, the counter will advance the length of the sequence you are recording, not the step record size amount.

For more information on subsequences, see *Chapter 8: Understanding and Using Subsequences.*

To Change the Step Value: You can use the numeric keypad to quickly change the step value. See page 286 for more information.

❑ Inserting Notes

Inserting notes is similar to Step recording, only you will define the size of the note you wish to insert, then click in the Piano Roll or Notation display area in the place you wish to insert notes.

Define Notes to Insert

Double-click the Pencil Tool in a Graphic or Notation window to open the Insert Notes window. In this window, you will define the duration and velocity of the note you will insert.

Figure 3.4: The Pencil Tool is available at the top of Notation and Graphic windows

This window will also open if you click the Pencil Tool while it is already selected.

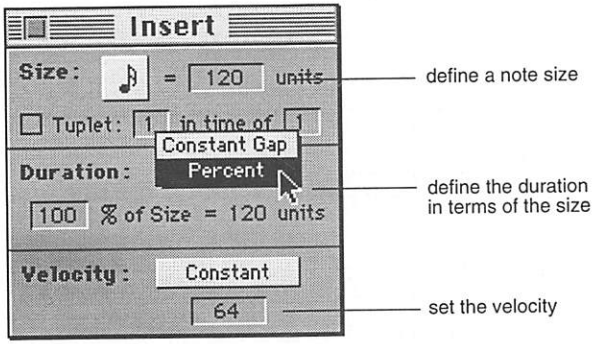


Figure 3.5: The Insert Note Window

See *Chapter 25: The Note Size Window* for complete information on the parameters in this window.

Insert Notes Directly in the Track

In the Graphic and Notation windows, you can insert a note by clicking in the display area of the active window.

1. **Select the Pencil Tool if it is not already selected.**
2. **Watch the cursor display as you position the cursor in the location where you want a new note to appear.**

   While you are inserting notes, the cursor will change into the length of note you will insert.

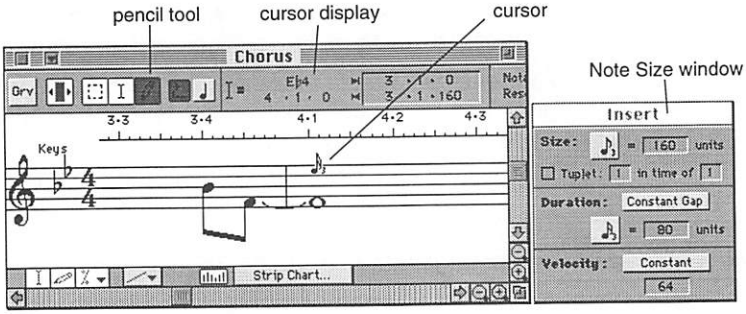
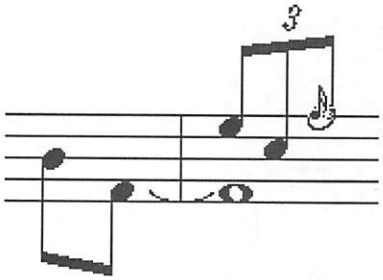


Figure 3.6: Inserting a note

3. **Click the mouse button.**
   You can drag the note into the correct position before releasing the mouse.



Use Cursor Quantize: While inserting notes, it is usually a good idea to activate cursor quantize and watch the cursor display area. This will give you better control over the placement of each note you insert.

"Painting" Notes in the Piano Roll

In a Graphic Window, you can insert notes individually as described in the previous section, or you can "paint" them in by holding down the shift key on your Macintosh keyboard while you drag the note to the desired length.

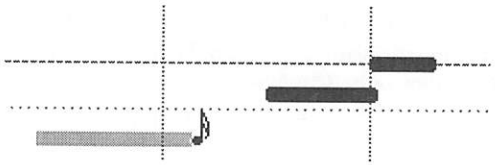


Figure 3.7: Hold down the shift key with the Pencil Tool selected to "paint" notes

As always, all cursor movements will be restricted to the cursor quantize setting (see "Using Cursor Quantize" on page 89). The velocity set in the Insert Notes window will be used.

Loop Recording

When you enable looping, Vision will loop continuously between the In Point time and the Out Point time.

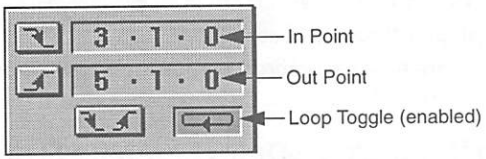
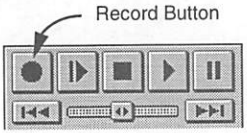


Figure 3.8: In this example, your sequence will repeat two bars—from bar 3 through bar 4

If you record with looping enabled, you can build your track data and keep adding more layers. You can also change the instrument or track while you are recording.

Here is the basic procedure for loop recording:

1. **Set the record mode to either Replace or Overdub.**
   In Replace mode, the track will only be erased the first time you record the sequence—you will not replace your performance each time the sequence "loops around."
2. **Set the Punch Points to the times you want to build your sequence.**
3. **Enable the Loop Toggle in the Control bar.**
4. **Choose the instrument you want to use.**
5. **Record-enable the track you want to record.**
6. **Click the Record button.**



7. **Record your performance.**
   When the sequence "loops" you will hear what you just recorded.
8. **If you are satisfied with your performance, type the Enter key on your Macintosh keyboard.**
   Vision will continue loop recording.
9. **If you want to erase what you just recorded, type the delete key on your Macintosh keyboard.**
   Vision will erase everything you recorded so far, or since you typed the Enter key.

10. **If you want, change instruments by choosing from the Thru Instrument pop-up on the Control bar.**
11. **If you want, change the track you are recording by choosing from the Current Track pop-up in the Control bar.**

    You can also type **Command-up arrow** to enable recording on the previous track, or **Command-down arrow** to enable recording on the next track.
12. **Repeat steps 7 through 11 above.**
13. **When you are finished recording, click the Stop button.**

Advanced Loop Recording—Drum Machine Style

By using a combination of Vision features, you can create a drum track using typical drum machine techniques. To follow this procedure, you should use a "drum set" program on your MIDI sound source—one that allows you to access many different drum sounds from a single keyboard or MIDI channel.

Using the method outlined in this section, you can use your keyboard to enter music automatically while you hold down a note on your MIDI keyboard, rather than playing every note. This may be a familiar way to record drum patterns if you have used drum machines. Here is the basic procedure:

1. **Choose MIDIKeys from the Windows menu.**

   The MIDIKeys window appears.
2. **Define the Repeat and Erase fields to a MIDI event that you will not use in your recording.**

   Foot switches and MIDI notes (that are out of your normal record range) work well. For example, Figure 3.9 shows two high notes being used to control Erase and Repeat functions.

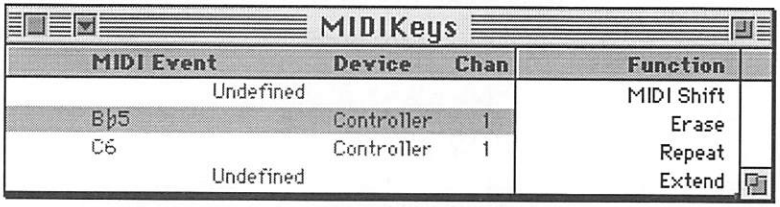


Figure 3.9: Define the Erase and Repeat MIDIKey functions

3. **Use the procedure in the previous section to set up loop recording.**

   Follow the steps starting on page 37 to set up basic loop recording.

4. **Choose Quantize from the Windows menu.**
   The Quantize window appears.

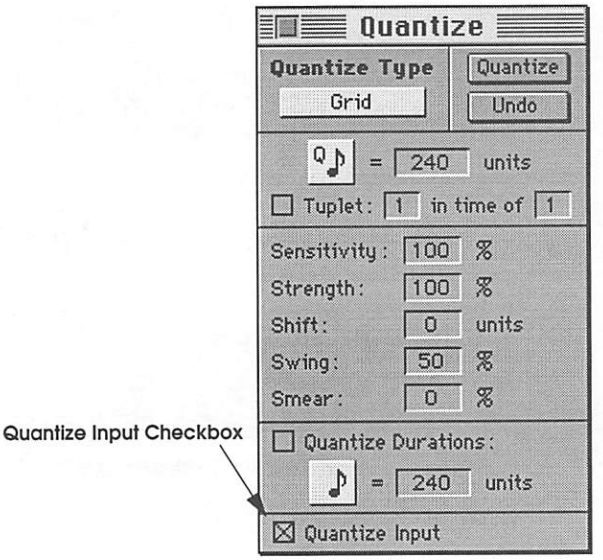


Figure 3.10: The Quantize Window

5. **Check the Quantize Input checkbox if you want to quantize notes upon input.**
6. **From the quantize resolution pop-up menu, select the repeat note size (sixteenth note, eighth note, etc).**
7. **Choose Preferences from the Options menu.**
   The Preferences dialog will appear.
8. **Enable the Aftertouch sets Repeat Velocity checkbox. Click OK.**

   This will allow you to change the velocity of notes you record while holding down a key on the MIDI keyboard as a function of how hard you press (this is called *Aftertouch).*
9. **To record a string of notes, hold down the note you defined as "Repeat" simultaneously with the note you wish to record.**
   The notes will repeat at the frequency selected in the quantize resolution pop-up (as discussed in step 6).

10. **To erase a note, hold down the note (or other MIDI event) you defined as "Erase" and play the note you wish to erase while it is playing.**

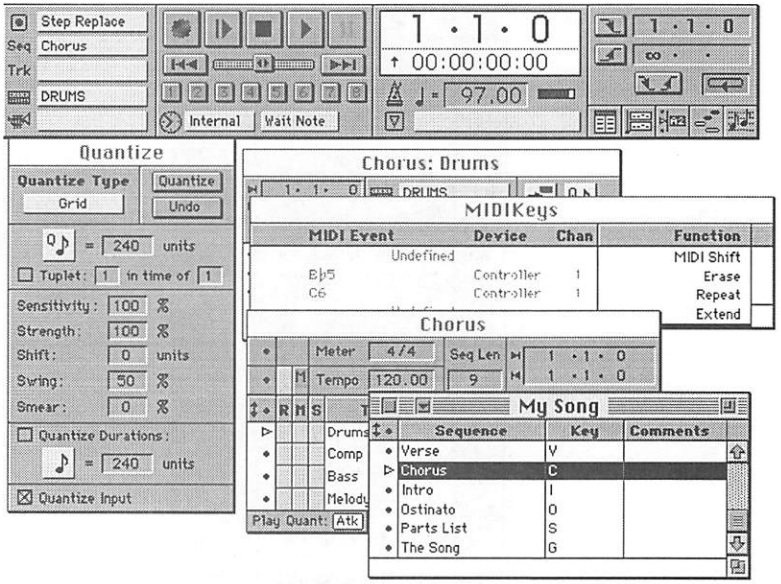


Figure 3.11: Recording Drum Machine Style uses a variety of Vision features

❑ Punch Recording

Like a tape deck, punch recording allows you to record only during a specified time range. Punch recording, often called "punching," allows you to keep parts of your performance while replacing other parts in the specified time range.

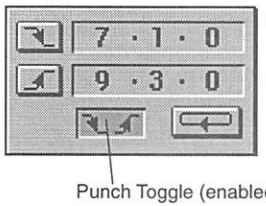


Figure 3.12: To use Punch Recording, you must enable the Punch Toggle on the Control Bar

Here is the basic procedure for punch recording:

1. **Set the record mode to Replace.**
   Punch Recording *will* function in Overdub mode, but since the point of punch recording is to replace a specified section of your performance, you will most likely want to set the record mode to Replace.
2. **Enable the Punch Toggle in the Control bar.**
3. **Set the Punch In and Punch Out Points.**
4. **Choose the instrument you want to use.**
5. **Record-enable the track you want to record.**
6. **If you want Vision to automatically stop playing the sequence at the Punch Out point, enable the Stop at Punch Out menu item in the Options menu.**

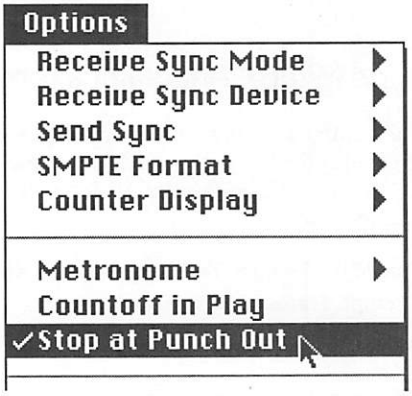


Figure 3.13: If you want Vision to automatically stop after recording, make sure this menu item is checked.

7. **Click the Record button.**
   The sequence will begin to play, and the record button will flash until it reaches the Punch In point.
8. **When the sequence advances to the Punch In point, play the new performance.**
9. **If necessary, click the Stop button when you are finished recording.**

❑ Virtual Conducting—Recording a Tempo Track

Recording a MIDI performance usually means playing along with a metronome. Of course you don't *need* to—but if you don't, Vision has no reference for notation and quantization. Vision does, however, have a very elegant way to deal with this—the **Reclock** command. Also, you can use the **Scale Time** command for global or bar-by-bar tempo adjustments. See "Editing a Rubato Performance" on page 50 for more information on both these procedures.

If you use a metronome while recording, you may notice that your performance sounds somewhat stiff. Here are three ways you can manually record tempo changes and add a "human feel" to these performances, allowing you to "conduct" a sequence after you have recorded it, speeding up and slowing down whenever you want.

Changing the Tempo in the Control Bar's Tempo Display

If you mute the Tempo track in your current Sequence, you can use the Control Bar's Tempo Display to change the playback tempo. If you change the Control Bar's Tempo Display while *recording*, Vision records your changes in the Sequence's Tempo track.

1. **Record enable the Tempo Track in the Tracks window.**
2. **Mute the Tempo Track in the Tracks window.**

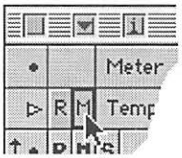


Figure 3.14: Mute and enable recording in the Tempo Track

The Control Bar's Tempo Display is now editable.

3. **Set the Begin Record toggle to Countoff.**
4. **Click the Record button.**
5. **Highlight the tempo, and set it to the desired tempo as the sequence plays.**
   You can use the plus and minus keys on the Macintosh keypad.
6. **When you are finished recording, click the Stop button.**

Tapping the Tempo

You can set the tempo in the Control Bar's Tempo Display by tapping the single quote (') key on your Macintosh keyboard, and you can record this in the tempo track. When you are tapping the tempo, Vision will average the last four taps.

1. **Record enable the Tempo Track in the Tracks window.**
2. **Mute the Tempo Track in the Tracks window.**
3. **Set the Begin Record toggle to Countoff. Set the countoff to a good length, perhaps 6 or 8 bars.**

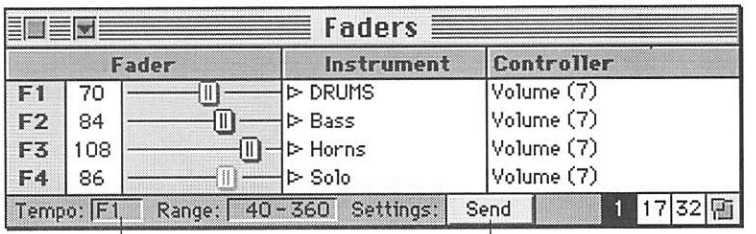
   It may take you this long to get the tempo to the desired setting.
4. **Click the Record button.**
5. **Tap the single quote key (') on your Macintosh keyboard at the tempo you wish to record.**
6. **When you are finished recording, click the Stop button.**

Using a Fader to Record Tempo Changes

You can assign a fader to control the tempo, then move the fader to create tempo changes.

1. **Record enable the Tempo Track in the Tracks window.**
2. **Mute the Tempo Track in the Tracks window.**
3. **Choose Faders from the Windows menu.**

   The Faders window will appear
4. **Set the Tempo field to F1. Set the Settings field to Send.**



5. **Set the Begin Record toggle to Countoff. Click the Record button.**
6. **Drag the F1 fader to set new tempo settings as the sequence plays.**
7. **When you are finished recording, click the Stop button.**

CHAPTER 4: General Editing Procedures

❑ Loop Editing

You can use the loop controls to set up an editing loop. This way, you can fine tune your MIDI data while you listen to it. Here is one procedure to set up a loop, where you can perform editing functions. This procedure will also work in other edit windows, but for this example we will use a Graphic window:

1. **Open a Graphic window of the track you wish to edit.**
2. **In the Ruler, select the time range you want to hear while you are editing.**

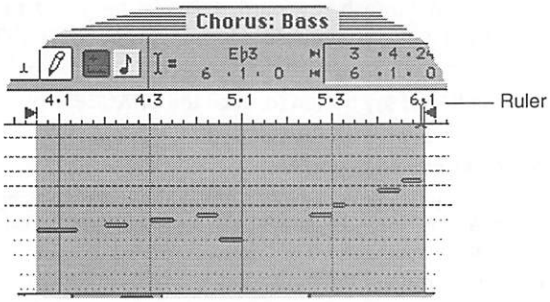


Figure 4.1: Select the range you wish to edit.

3. **On the Control Bar, activate the Loop Toggle and click the Set In Point and Set Out Point buttons.**

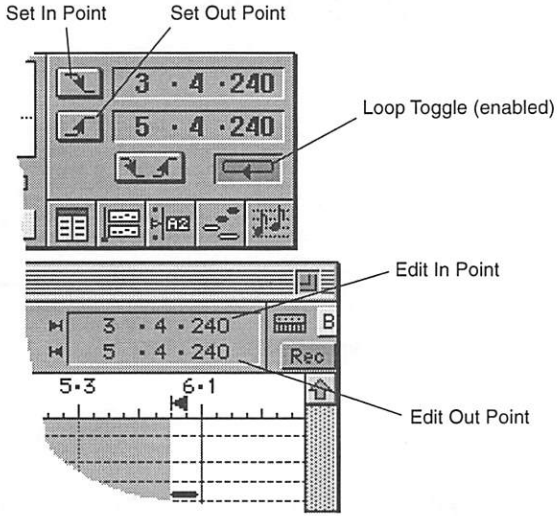


Figure 4.2: After you have made a selection in an edit window, enable the Loop Toggle and click the Set Point buttons on the Control Bar to set up your selection to repeat.

Key Equivalents: To click the Set In Point button, type the [key on your Macintosh keyboard. To click the Set Out Point button, type the] key. To enable or disable looping, type **SHIFT-7.**

---

4. **Click the Play button (or type the SPACEBAR).**

   You sequence will start playing.

5. **Make any edits you wish.**

   When your sequence loops around and starts playing from the in point, you will hear any changes you made in the specified time range. You can continue to make edits.

6. **When you are finished, click the Stop button.**

Undo in Real-Time. You can choose **Undo** from the **File** menu to undo the previous edit while you are playing.

❑ Editing While Recording

While you are recording, you can make edits to your MIDI data. If you are loop recording (see page 37), you can use the steps described in the previous section to edit while you are loop recording.

It is important to understand how editing during recording affects the undo command. If you make an edit during recording, you can undo the edit by immediately choosing **Undo** from the **Edit** menu (or type Command-Z).

If you click the Stop button, or the counter stops for any other reason, choosing **Undo** will undo the entire recording, and all edits made while recording.

❑ Editing Multiple Tracks Simultaneously

From the Tracks window, you can select many tracks, define a time range, and apply an edit command to the selection. Here is the basic procedure:

1. **In the Track Overview ruler of the Tracks window, make a selection.**
   This will select all tracks in the sequence. At this point, any edits you perform will affect all MIDI events within the selected range for *all* tracks.

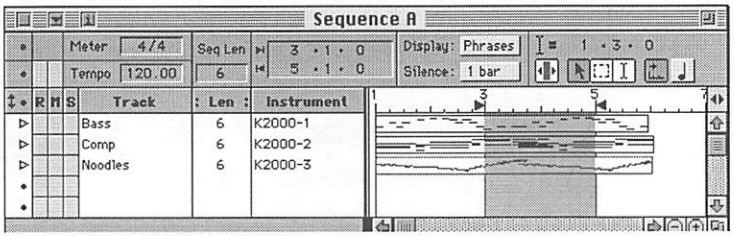


Figure 4.3: Making a selection in Track Overview

2. **Shift-click the selector triangle of any tracks you do not want selected.**
   At this point, any edits you perform will affect all MIDI events within the selected range for only the selected tracks.

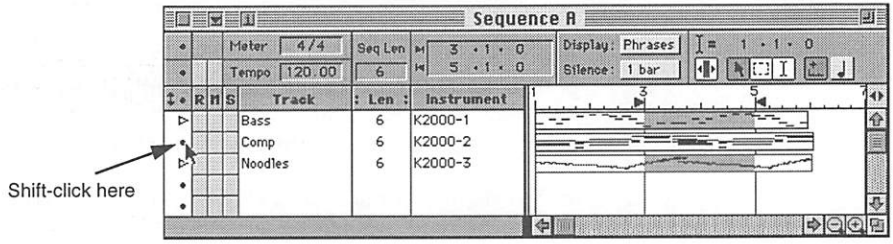


Figure 4.4: De-selecting Tracks

NOTE: If you click a selector triangle without holding the shift key, the selected tracks become highlighted (as shown in Figure 4.5) and Vision enters Tracks mode. In this mode, any edits you perform will affect *all* events in the highlighted tracks, not just those within the selected time range. For example, in this mode the **Copy** command would appear as "**Copy Tracks**" instead of "**Copy Selection**".

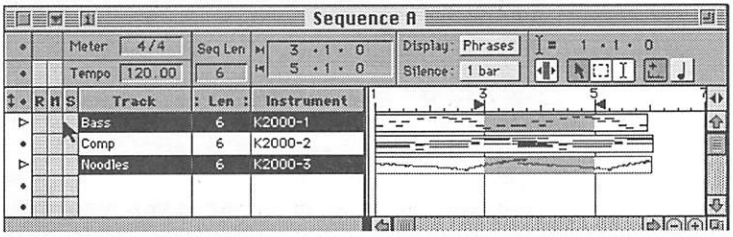


Figure 4.5: Tracks Mode Selection

3. **If the operation you want to perform is available only from another window, such as the Strip Chart in the Graphic window, open that window.**

   When you have multiple Tracks selected, the Graphic window will display the number of selected tracks in the title bar:

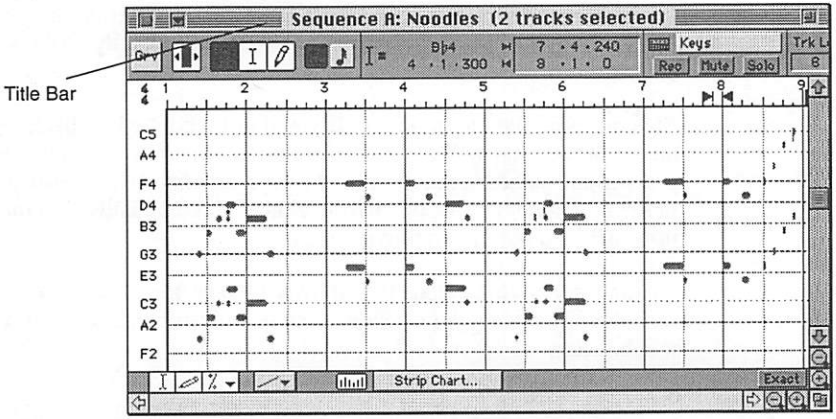


Figure 4.6: A Graphic Window with multiple tracks selected

4. **If you want to fine-tune your selection based on the contents of the Edit window, you can select notes or a time range in this window.**

   Notes in all tracks will be selected.

5. **Perform your edit.**

   The edit will be performed on all selected events on all selected tracks.

Global editing with tempo and meter tracks. If you have tempo or meter changes that you want to edit in your selection, be sure to select the Tempo or Meter tracks.

Multiple Track Editing in the Notation Window

You can edit multiple tracks directly in a Notation window. When you click on the Notation icon, a window will open displaying all of the tracks that are currently selected in the Tracks window. This allows you to copy notes from one track and paste them into another. Selecting a range of notes in the Notation window may result in different Tracks being selected. Any change in the track selection states will be apparent by viewing the selector triangles in the Tracks window.

❑ Editing a Rubato Performance

Music recorded *rubato* implies a performance that doesn't adhere to a strict sense of time—although you can feel a pulse, an expressive performance may speed up and slow down. You don't need to use a metronome when you record, and when you want to play *rubato,* you probably will not want to use one.

This raises a potential problem. If you don't record while listening to a metronome, the counter will not accurately reflect the music, and the notation (both graphic and standard notation) will not be accurate. This is especially apparent in the notation window, but affects almost all commands, and makes it almost impossible to use quantizing features.

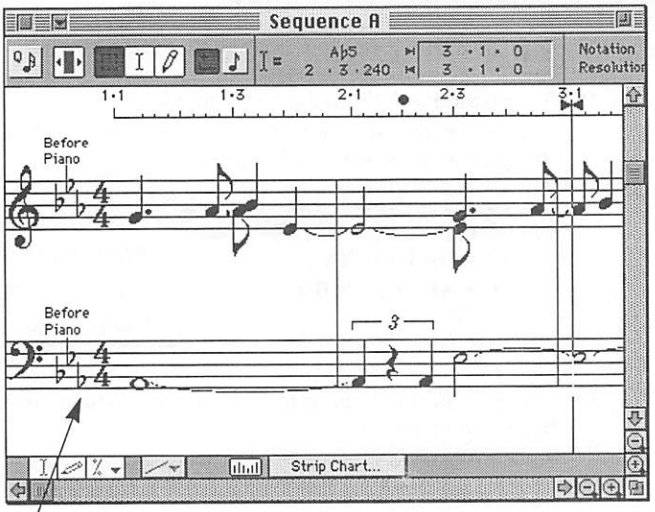
Vision offers two methods that allow you to define the barlines *after* you have recorded. This way, your notation and quantize operations will work much better.

- Scaling Time

  Select the music measure-by-measure, then scale the time to define each measure. This can also be used to convert meters. For example, you could convert a 6/8 measure of eighth notes into a 2/4 measure of eighth note triplets.
- Re-clocking to a click track

  Record a click track (or use an existing track) and edit its timing if necessary. Use the **Reclock** command to move the beats and barlines to match the click track without changing the tempo the sequence plays at.

Figure 4.7 on page 51 shows how following these steps will improve the notation.



Before. This music was recorded freely with no metronome. It does not line up with Vision's barlines, so it is hard to read.

After. You can scale each measure to fit Vision barlines. Vision can automatically add tempo changes so it doesn't sound any different.

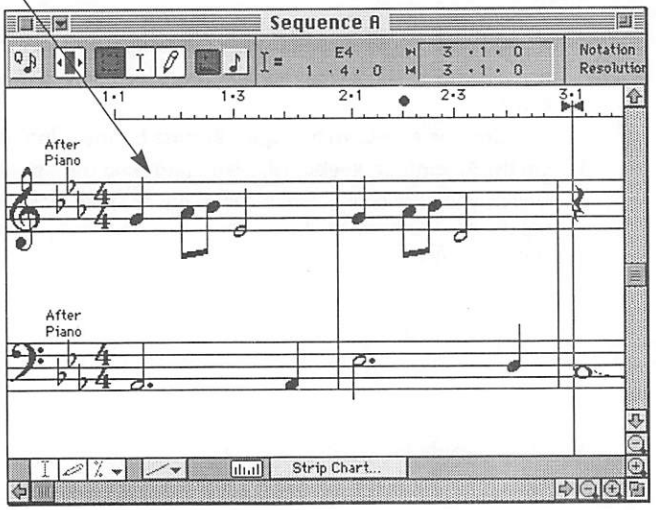
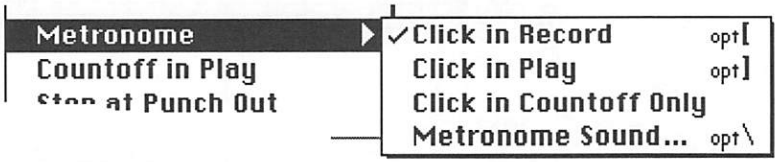


Figure 4.7: Before and After. Notice that the music recorded freely does not match Vision's barlines, and afterwards it does

Recording a Rubato Performance

You should start with a track that you recorded rubato (i.e., in "free time").

1. **Record a track without the metronome.**
   You can turn off the metronome by making sure all items are unchecked in the Metronome submenu in the Setups menu.



2. **Record your rubato performance as described in "Real-Time Recording Basics" on page 31.**
   You don't need to worry about the timings while you are recording this way.

Scaling Time in the Ruler

When you are in a Graphic or Notation window, you can use the ruler to scale time. Rather than aligning music to the ruler, you can align the ruler to your music.

1. **If you know the time range you wish to scale, select the time range.**
   If you do not select a time range, you will scale time only in the measure you change.
2. **Position the cursor over a quarter note bar/beat indicator in the ruler.**
3. **On the Macintosh keyboard, press and hold the option and shift keys.**
   Unless you position the cursor over a quarter note indicator, it will become the hand cursor. Otherwise, the cursor will indicate that you can now scale the selected time.

4. **Drag the bar/beat indicator to line up with the desired MIDI data.**

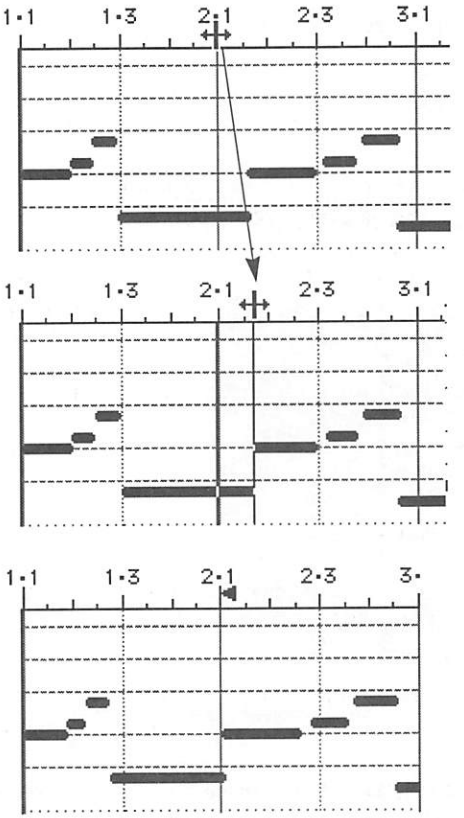
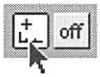

1•1
1•3
2•1
2•3
3•1
position the cursor over a quarter note beat indicator in the ruler...
...option-shift-drag the indicator to the desired location...
...notes are shortened to fit in the measure. The first measure is now selected.

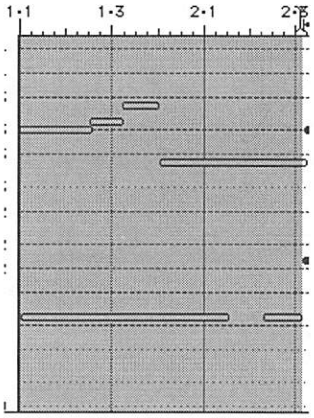
Figure 4.8: Scaling Time in the Ruler

Using the Scale Time Dialog

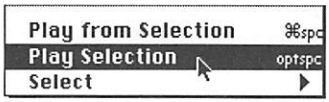
1. **Turn off Cursor Quantize**



2. **Select the First measure *as you hear it.***
   This example is shown in a Graphic window—you can select it anywhere.



Notice that in the example, the selection covers more than one measure according to the Vision ruler. The bar numbers are presumably not accurate at this point. To audition each selection and to make sure you have a single measure selected, choose **Play Selection** from the **Do** menu (or type option–spacebar).



3. **Choose Scale Time from the Do menu.**

   The Scale Time dialog will appear. For more information on this dialog box, see "Scale Time" on page 343.

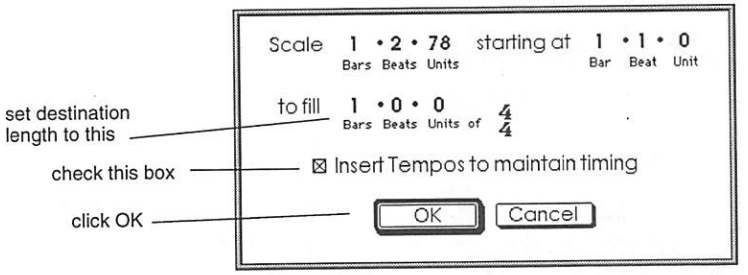

Scale 1 • 2 • 78 starting at 1 • 1 • 0
Bars Beats Units
Bar Beat Unit
to fill 1 • 0 • 0 Bars Beats Units of 4/4
⊠ Insert Tempos to maintain timing
OK
Cancel
set destination length to this
check this box
click OK

Figure 4.9: The Scale Time dialog with appropriate settings for this procedure

4. **Change the destination length to 1•0•0.**

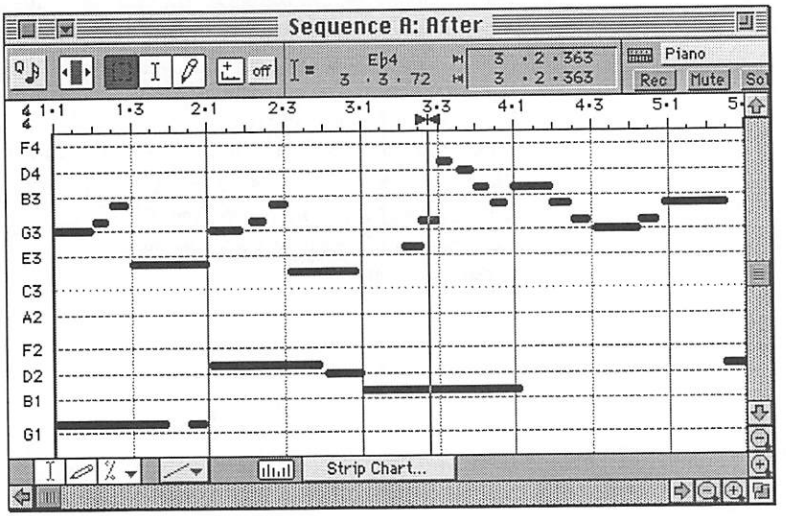
   If you aren't working in 4/4 time, set the time signature as well.

   Although this example uses whole measures, you can scale any amount of time. Set the destination length to the desired length.

5. **Check the Insert Tempos to maintain Timings checkbox. Click OK.**

6. **Repeat steps 2 through 5 for each measure in the track.**

   Your music will now line up against Vision's barlines.



Vision will automatically insert tempo changes into the tempo track so even if you were playing rubato, the track will sound exactly as you played it. You can view these in the Tempo track.

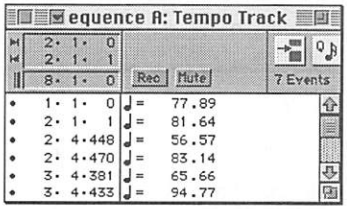


Figure 4.10: Vision will automatically make changes in the Tempo track so your music will retain its free feel

Re-clocking to a Click Track

Using this method, you will record a track that Vision will use to "line up" a sequence not recorded to a metronome. Vision will automatically add tempo changes *and* meter changes to reflect your performance.

1. **Record-enable a new track. Name this track "Click Track." Set the instrument of the Click Track to a "click" sound.**
2. **Set the Begin Record toggle to Wait for Note mode. Click the Play button.**
3. **Tap the tempo on the MIDI keyboard as you listen to the performance.**

   If there are multiple meter changes, you should play two different keys. Otherwise, you should play one note for the click track. You don't need to click every beat, but you should if the tempo changes a lot.
4. **When you are finished recording the click track, click the Stop button.**
5. **Play it back and, if necessary, edit your click track to correct any mistakes.**
6. **Choose Reclock from the Do menu.**

   The Reclock dialog will appear. See "Reclock" on page 347 for information on the parameters in this dialog.

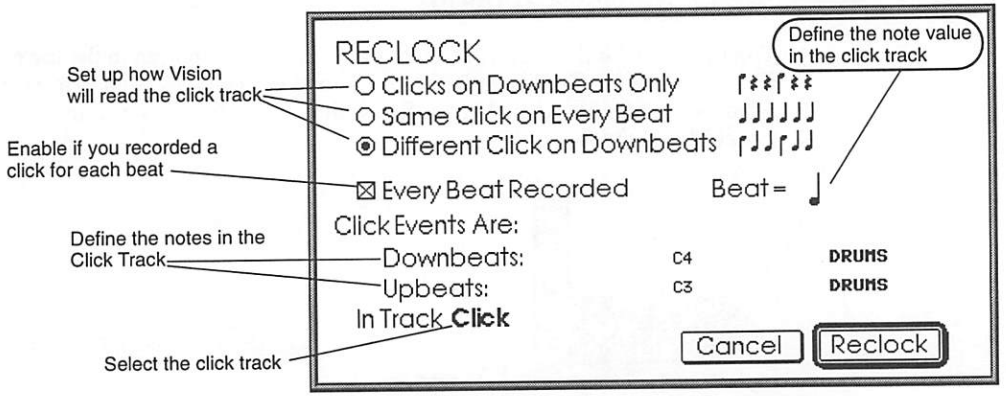


Figure 4.11: The Reclock Dialog. For full description, see page 347

7. **After making the appropriate settings, click OK.**

The counter will now automatically reflect the performance, and add meter changes and tempo changes wherever appropriate.

❑ Using Exact Mode

There are times when you may want to specify exact values while editing, whether moving a note, drawing in the Strip Chart, or selecting an edit region with the cursor. Using Exact Mode allows you to specify those amounts which might not be possible to see in some magnifications of the Graphic and Notation widows.

Whenever you use Exact mode, Vision will open a dialog box to let you fine-tune an edit—the parameters in the dialog box will be defined by your last action. This can give you a head start when you want to quickly but accurately modify notes.

Exact The Exact Toggle Button

To turn Exact Mode on and off, click the Exact Toggle button in the lower right corner of the Graphic and Notation windows. You may need to re-size the window in order to see the button. Each window can have a separate Exact Mode setting.

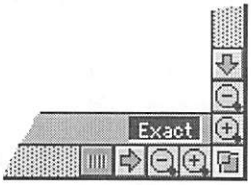


Figure 4.12: Exact Mode Toggle (enabled)

Exact Mode Dialogs

When Exact Mode is enabled, each operation you perform will open a dialog box. This dialog will show the type of operation you are performing, and allow you to enter the parameters for the operation.

In most cases, the dialog will open with the parameters pre-set according to the action(s) you just performed.

When you are finished entering this information, click OK. You can also leave the operation by clicking Cancel—this will leave the material unchanged.

Exact Selections

If you release the mouse after selecting an area with the Marquee or I-beam cursor, the Exact Mode dialog will allow you to precisely set the Time selection and, if you used the Marquee cursor, the Note Range.

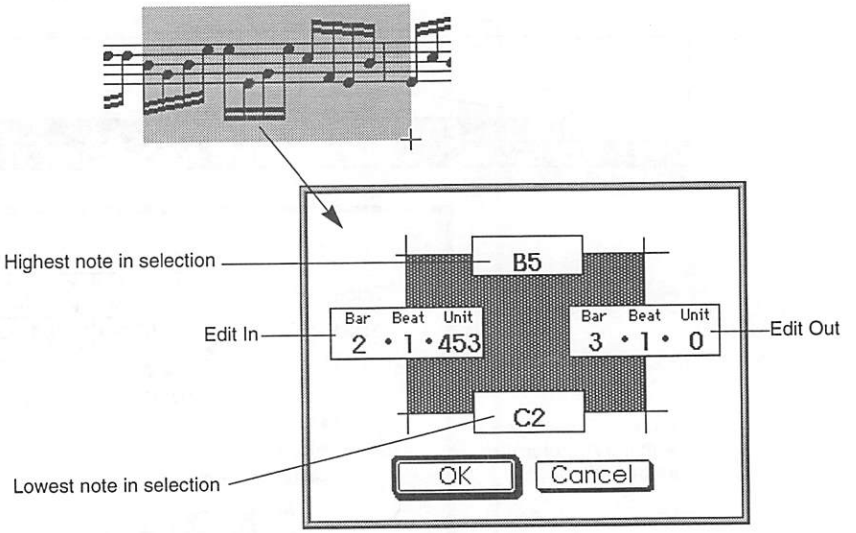


Figure 4.13: Setting a selection Range in Exact Mode

Moving Notes in Exact Mode

If you move notes in this mode, the Move Events dialog will open, allowing you to set the amount you would like to move. The parameters in this dialog will be set to the amount you dragged when opening the box.

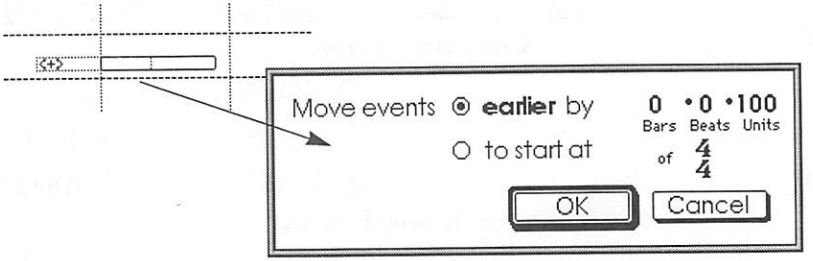
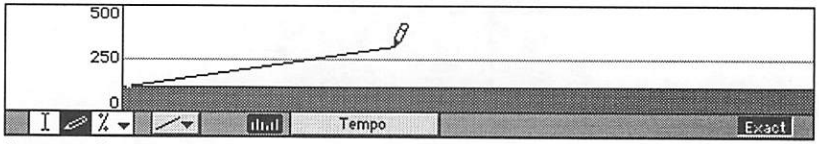


Figure 4.14: In exact mode, moving an event opens the Move Events Dialog

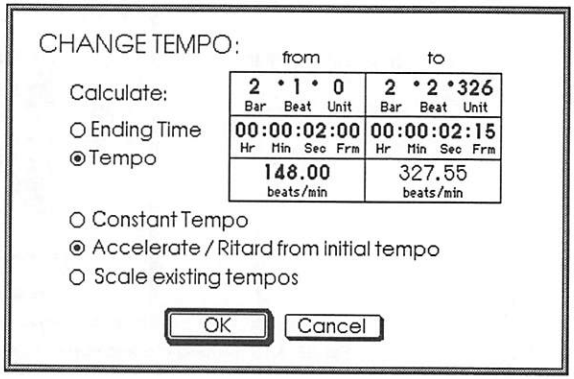
Changing the Tempo in Exact Mode

If you are using the Strip Chart to edit the tempo in Exact Mode (as discussed in *Chapter 5: Using the Strip Chart*), drawing a line in the Strip Chart will open the Change Tempo Dialog. Vision will automatically set the dialog box parameters to reflect the line and tool that you used to draw the line.

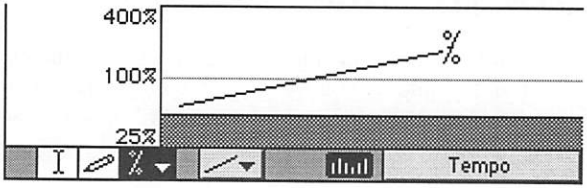


If you use the pencil tool...

...the dialog will open with the Accelerate/ Ritard option.



But if you use the Scale tool...



...the Scale option will be set.

Figure 4.15: Changing the tempo

Transposing in Exact Mode

After moving notes in pitch in Exact mode, the Transpose dialog box will open. The parameters in this dialog will be set to the amount you dragged when opening the box.

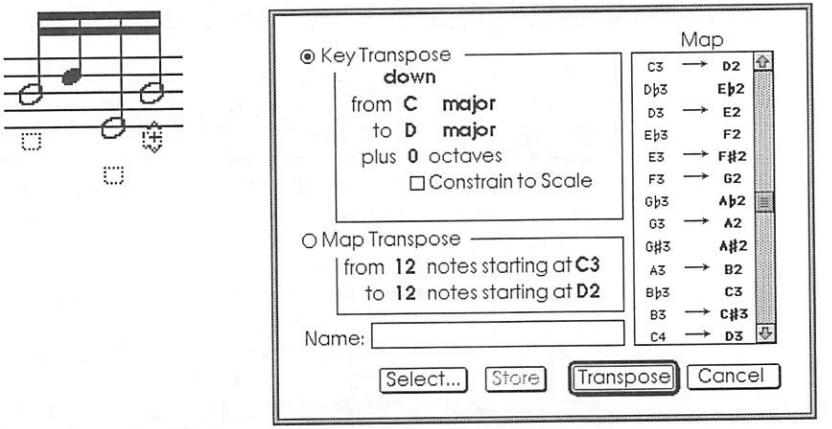


Figure 4.16: Changing the pitch in Exact Mode opens the Transpose Dialog

Changing Durations in Exact Mode

After changing note durations in Exact Mode, the Modify Notes dialog will open with the Add Amount, Duration, and value set to the amount you changed the note.

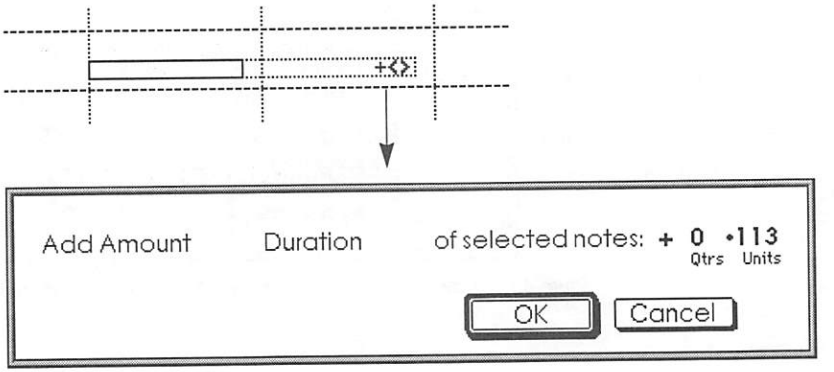


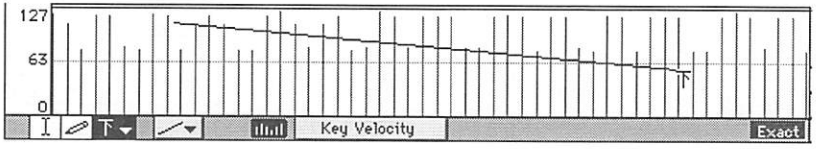
Figure 4.17: The Modify Notes Dialog

Scaling Time in Exact Mode

iIf you scale time in Exact mode (as discussed in "Scaling Time in the Ruler" on page 52), Vision opens the Scale Time dialog box.

Drawing an Exact Line in the Strip Chart

When you are in Exact Mode and you draw a line in the Strip Chart (as discussed in *Chapter 5: Using the Strip Chart*), the exact Mode Dialog will allow you to precisely set the parameters of the edit. The line displayed in this Exact mode dialog box is merely representative of the lines created in the Strip Chart—it doesn't represent the actual line you've drawn (although it does show the actual *values* you've drawn). Set the value you want in each parameter and click OK.



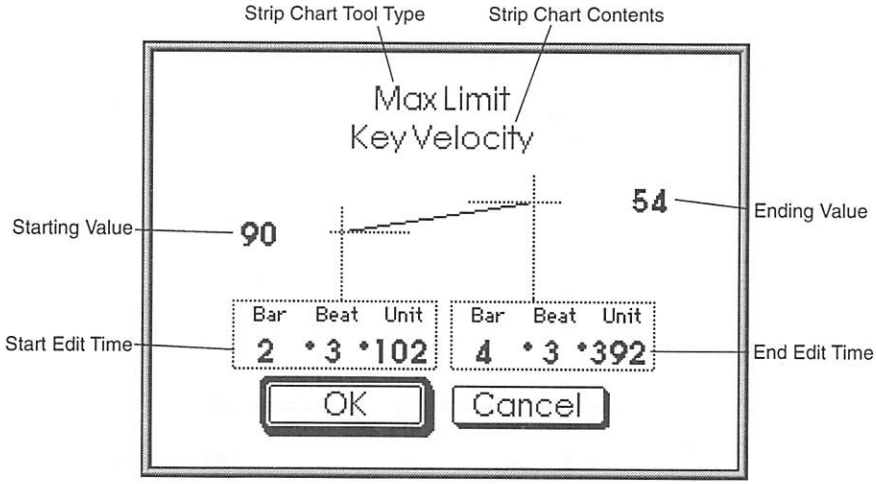


Figure 4.18: Drawing an Exact Line in Strip Chart will give you this dialog

CHAPTER 5: Using the Strip Chart

❑ What is the Strip Chart?

The Strip Chart is a powerful area of the Graphic and Notation windows that allows you to graphically view and edit MIDI data that you can't otherwise see. Using the Strip Chart, you can simply draw a decrescendo, or easily add an accelerando. Each event is shown as a rectangle.The height of the rectangle determines the value of the MIDI event; the left edge of the rectangle determines the start time of the event; and the width of the rectangle determines the duration of the MIDI event.

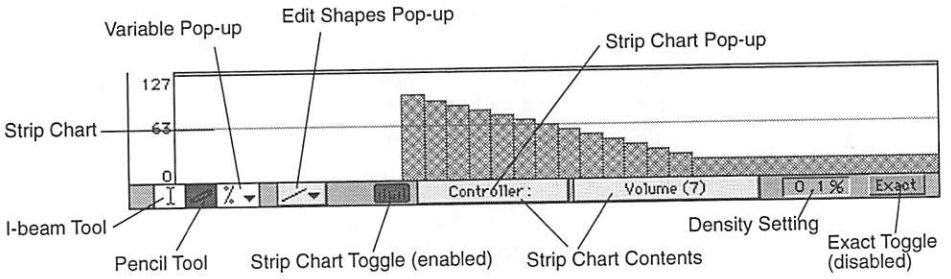


Figure 5.1: The Strip Chart

Using the strip chart, you can view and edit such events as:

- velocity
- duration
- pitch bend
- modulation wheel
- program changes
- tempo
- text events (view only)
- lyrics (view only)
- copyrights (view only)
- system exclusive data (view only)
- markers (view only)

Opening the Strip Chart

The Strip Chart is available in the Graphic and Notation windows. There are two ways to open the Strip Chart:

1. **Click the Strip Chart toggle at the bottom of the window.**
   The Strip Chart will open, showing the last information you displayed in the Strip Chart.

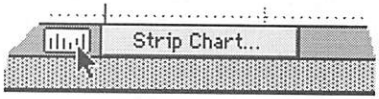


Figure 5.2: Clicking the Strip Chart toggle

2. **You can also choose an event type from the Strip Chart pop-up. This will automatically enable the Strip Chart toggle.**
   See Figure 5.3 for an image of the Strip Chart pop-up.

Keyboard Equivalent: You can type SHIFT-3 on your Macintosh keyboard to toggle the strip chart on and off.

Defining the Strip Chart Contents

You can use the strip chart to display and edit a variety of events. To choose the event type:

1. **Choose the desired event type from the Strip Chart pop-up.**

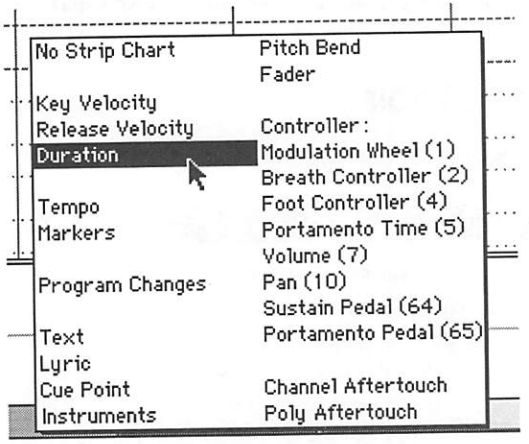


Figure 5.3: Defining the Strip Chart Contents

2. **For some types of Strip Chart events, you may need to select from the second pop-up menu.**

   This will let you choose a different controller than the eight defaults in the Strip Chart menu.

The Strip Chart displays information for only one track. Inserting events in the Strip Chart will place the events in the displayed track, but not in any other tracks that are selected.

Modifying existing events in the Strip Chart will modify all events of that type in all selected tracks in the time range of the modification, even though the events from those tracks are not displayed in the Strip Chart.

In a Notation window that's displaying multiple tracks, the Strip Chart shows events only for the Current Track. The Current Track has a little triangle next to its name.

Closing the Strip Chart

There are three ways to close the Strip Chart:

1. **Click the Strip Chart toggle at the bottom of the window.**
2. **Type SHIFT-3 on the Macintosh keyboard.**
3. **Choose No Strip Chart from the Strip Chart Event pop-up.**

❑ The Strip Chart Tools

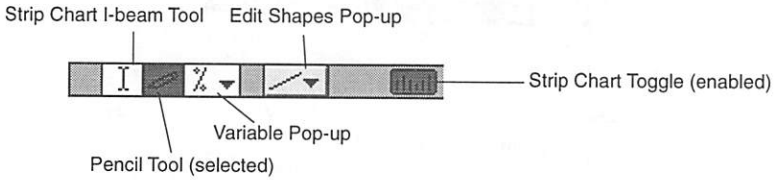


Figure 5.4: Strip Chart Tools

I The I-Beam Tool (Select)

Use this tool to click and drag over a selected time range in the Strip Chart *only*. The I-beam tool in the main edit window tool palette works similarly, but the two tools work independently of each other.

Even if the Marquee tool is selected in the main edit window tool palette, you can use the Strip Chart I-beam tool to select values in the Strip Chart according to time value.

However, the Strip Chart has a "hidden" Marquee mode in which you can select only events in a certain time range and value range. To access this, first select the I-Beam tool. Then click on the Marquee at the top of the window. The Strip Chart I-Beam will unhighlight, letting you know you're in Marquee mode. Clicking on either I-Beam will restore I-Beam mode.

The Pencil Tool (Set)

The Pencil tool allows you to draw a new set of values for a selected event or group of events.

The Pencil tool works with the Shapes you define in the Edit Shapes pop-up (see page 69).

The Variable Pop-up (Modify)

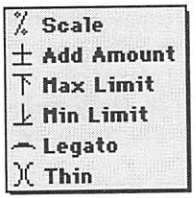


Figure 5.5: Variable pop-up in the Strip Chart

The Variable pop-up gives you access to a number of different types of tools with special functions, and works in conjunction with the Edit Shapes pop-up.

Scale

Using Scale, you can modify the Strip Chart data by a factor of 25% to 400%—the left margin shows the factor. Vision multiplies the value of each event by the factor that you draw (within the limit of the particular event).

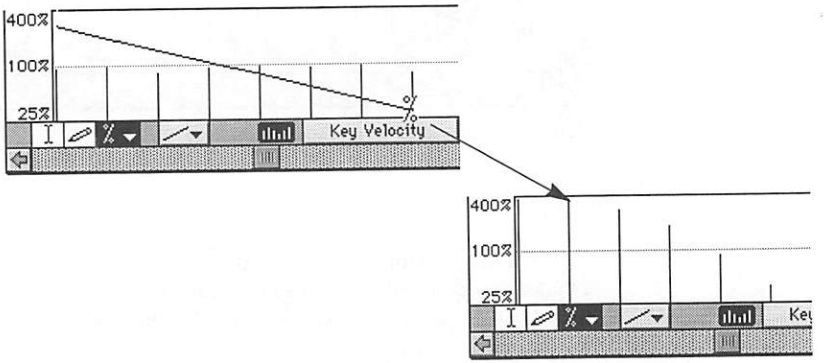


Figure 5.6: Using The Scale Tool with a Straight Shape

Add Amount

By setting the Variable pop-up to Add Amount, you can add or subtract from the values of the event according to the points on the line you draw. For example, if you have inserted notes with a velocity of 64, and you draw a sloping line going from 10 to 20, the value of the events will increase from 74 to 84 over the period of the time selected.

⊤ ⊥ Max/Min Limit

You can set a restriction on the range of values by setting the Variable pop-up to either Max Limit or Min Limit. For example, if you don't want any values greater than 48, you can select Max Limit and draw a line at 48 across the time range you wish to limit. In this example, all values greater than 48 will be clipped to 48, and all values less than 48 will not change.

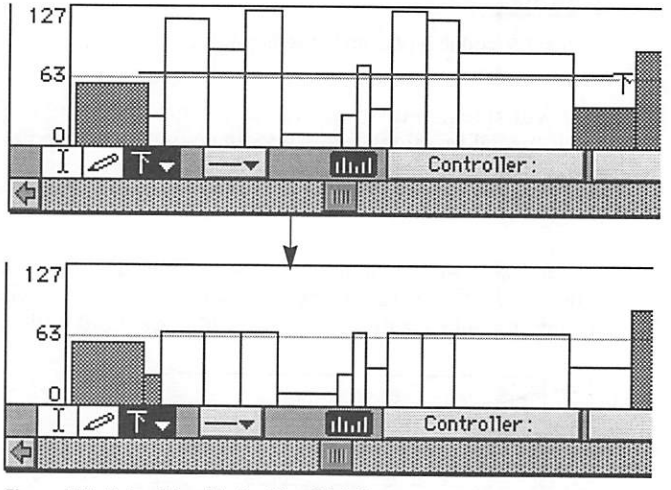


Figure 5.7: Using Max Limit with a Flat Shape

Legato

In this mode, Vision will change the duration of every note so that they extend a certain percentage of the way to the next note. If you use Legato on durations of notes by 100%, each note will extend until the following note begins.

NOTE: Legato is grayed out when the Strip Chart displays anything other than note duration.

)(Thin

Using Thin will allow you to erase some controller data so that it takes fewer events to achieve the same effect. Not only does this save memory, but it can speed up operations.

For example, if you have created a mix track and your track contains a lot of volume control data:

1. **Choose the Thin tool from the Variable pop-up.**
2. **Set the Density to a small amount (say.3%)**
3. **Drag across the control data you wish to thin.**

You can also "thicken." The density setting determines the amount of MIDI data that ends up in the track after thinning your track data. If you want to add track data, set this to an amount greater than the current density of events.

The Edit Shapes Pop-up

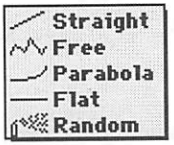


Figure 5.8: Edit Shapes pop-up

Straight

When you are using the straight shape, you can draw a line in any direction and make linear changes to Strip Chart events.

Free

Especially helpful when using the Pencil tool, Min Amount, or Max Amount, using a free shape allows you to draw a freehand line.

Parabola

You can use the parabola to draw a curve that gets steeper at the end. You can also use the parabola to draw a curve in the opposite direction, giving you a curve that's steeper at the beginning.

The shape and size of the parabola is defined by the direction and amount that you drag:

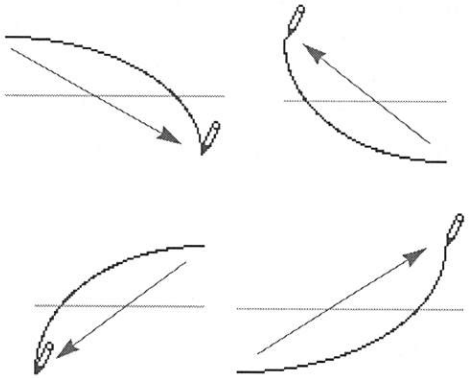


Figure 5.9: Four parabolas drawn differently. The arrows show the direction that the mouse was dragged.

Using the parabola is especially useful in defining fade outs:

1. **With the Strip Chart showing, choose Volume from the Strip Chart Event pop-up.**
2. **Select the Pencil Tool.**
3. **Choose Parabola from the Edit Shapes pop-up.**
4. **Drag a parabola from the top of the Strip Chart to the bottom, starting at the time you wish to begin fading, and stopping at the time your track ends.**

Flat

Use Flat to draw straight, horizontal lines. All selected data will either become the same level, or be added or scaled by the same amount.

This is especially useful with the Percent tool to scale everything by the same amount. See Figure 5.7 on page 68 for an illustration of using a flat shape.

Random

When you use the random setting, you will drag a rectangular box around the events, then Vision will randomly choose values within that box and apply the changes to the selected events. When the Variable pop-up is set to Add Amount, Vision will add a random amount between the values you outline. When it is set to Scale, Vision will choose random values to scale the selection up and down.

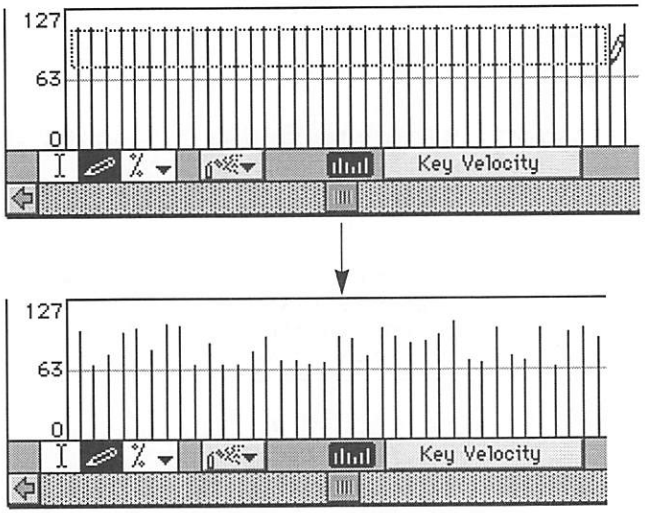


Figure 5.10: Using a Random Setting

A good use of the random setting is after step recording. If all velocities were recorded at the same value, you can randomly change the velocities to add a human feel to the performance.

How Vision Reacts to Illegal Values: If you use a tool that adds or subtracts, Vision will automatically assign the maximum value (usually 127) to any value that it calculates to be greater than this number. It will also automatically assign the minimum value (usually 0) to any value that is less than the minimum value.

❑ Using the Strip Chart

This section describes how to use the Strip Chart to view and change various event types.

To edit only the selected notes: When you are editing data in the Strip Chart, you can hold down the shift key to only affect the selected notes.

Duration

You can view and edit the note durations in the Strip Chart. This can be especially helpful in a Notation window, where you need to set the durations in finer detail than the duration pop-up allows (using the duration cursor automatically quantizes the note length).

When you select Duration from the Strip Chart menu, the Strip Chart will display a bar for each note that shows its duration. The value of the bar is shown on the left side of the Strip Chart mapped against a whole note scale.

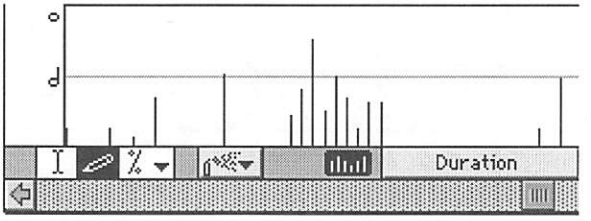


Figure 5.11: Using the Strip Chart to View the Duration

Velocity

The Strip Chart can display two types of velocity:

- key velocity
- release velocity

Velocity is not shown in the piano roll or notation window, so the Strip Chart provides a convenient way of viewing and editing it.

When you select either type of velocity from the Strip Chart menu, the Strip Chart will display a bar for each note that shows the velocity. The value of the bar (0-127) is shown on the left side of the Strip Chart.

Most keyboards and MIDI sound modules respond to key velocity—most do not respond to release velocity.

Poly Aftertouch

When you use the Strip Chart to display and edit Poly Aftertouch, a note number will appear in the second menu. The Strip Chart will only display and edit Poly Aftertouch events for one note at a time. To pick a different note, click on it and change it using the mouse or by playing it on your MIDI controller.

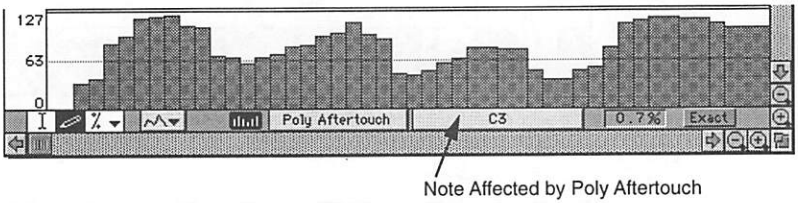


Figure 5.12: Using the Strip Chart for Poly Aftertouch

Fader Events

When you are using the Strip Chart to view and edit Fader events, a fader number appears beside it. The Strip Chart will only display and edit Fader events for the selected fader number. To pick a different number, click the Fader name and use the mouse or Macintosh keyboard to assign a different fader number.

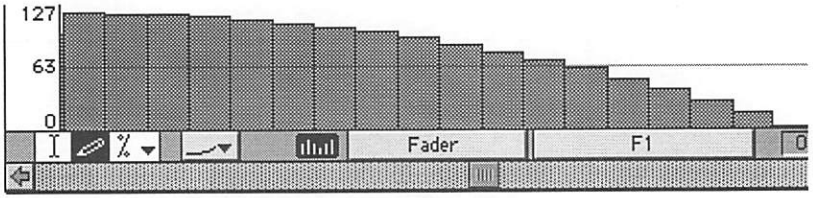


Figure 5.13: Using the Strip Chart for Fader Events

Program Change Events

To insert a program change in the Strip Chart, use the pencil tool to click at the time location where you want to add a program change. A pop-up menu will appear that lists the program changes available for the current instrument.

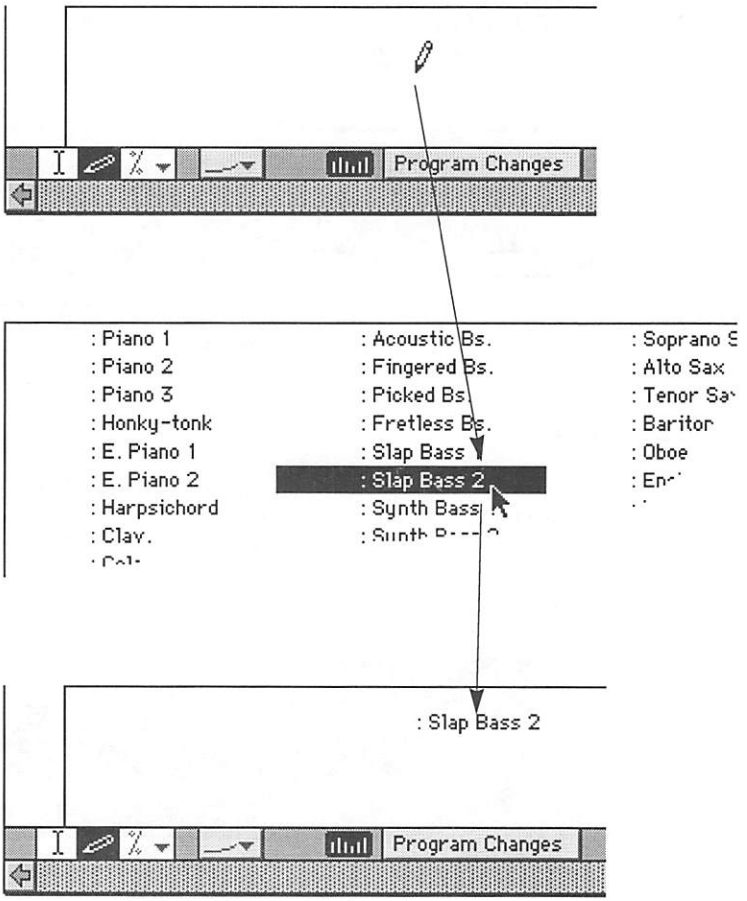


Figure 5.14: Adding Program Changes Using the Strip Chart

Selecting Controllers

Nine of the items in the Strip Chart pop-up menu allow you to select controllers. When you open a new Graphic window, eight of them are set to the eight favorite controllers (listed in the preferences dialog box—see page 376). One is simply labelled "Controller."

- When you select one of your eight favorite controllers for the Strip Chart, the name and number of the controller appears in the second pop-up of the Strip Chart contents. If desired, you can choose a new controller from this second pop-up.
- When you select "Controller" for the Strip Chart, the second pop-up contains Controller 0 (Bank Select). Select any desired controller from the second pop-up.

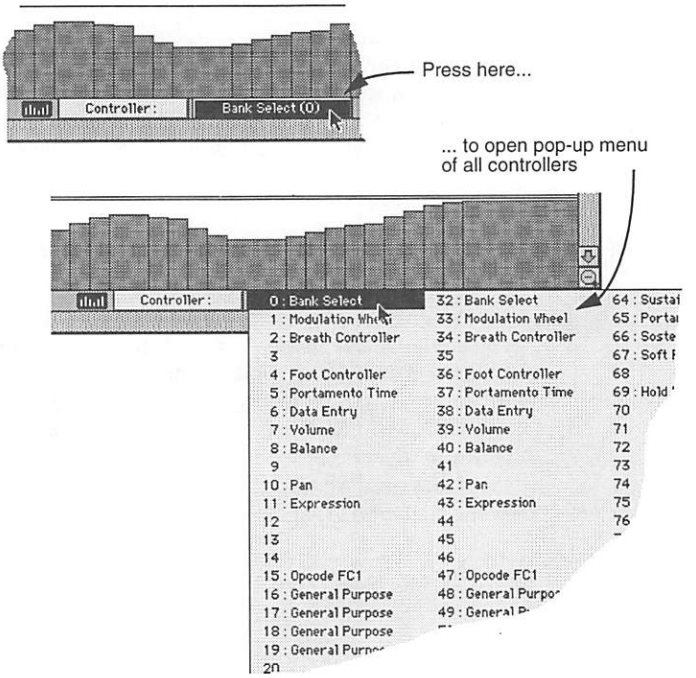


Figure 5.15: The Controller Pop-up in the Strip Chart

Editing the Tempo in the Strip Chart

Although tempo changes are stored in the tempo track of each sequence, you can edit the tempo track directly from the Strip Chart in another edit window. When you choose to edit the tempo track from the Strip Chart, Vision will automatically select the tempo track in the Tracks window.

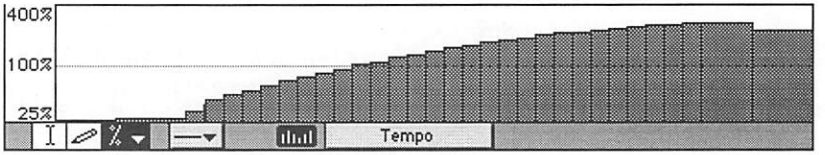


Figure 5.16: Viewing a tempo change in the Strip Chart

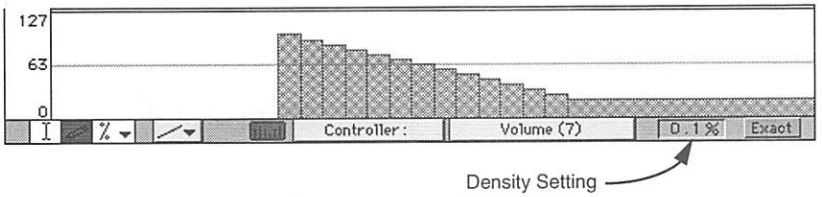
About Straight Line Tempo Edits: When you use the Straight Tool to draw an accelerando or ritardando in the tempo, Vision actually draws a curve. This is because a linear *sounding* tempo change requires a curved *value* change in order to sound linear.

Fine Controls

Vision allows Controllers numbered 0-63 to be in Fine or Coarse mode. When you are in Coarse mode, Vision displays and edits only values from 0-127. When you are in Fine mode, controllers 32-63 are interpreted as "fine tuning" for controllers 0-31, respectively. In this case, the combined value limits are 0 to 16383. Most MIDI sound modules don't use Fine controls. Consult your hardware manual to see if your sound module uses them—consult your ear to see if you need to use them. You can choose Fine Controls from the Preferences dialog box (page 376).

Using the Density Setting

When you choose the Pencil or Thin tools and any continuous event from the 2nd column of the Strip Chart Contents pop-up, the density setting will appear. You should keep this setting very low.



MIDI is capable of communicating about one thousand events per second. If you drew a pitch bend line from 0 to +1000 over one second, MIDI would be so busy transmitting pitch bend events that it wouldn't have time to do anything else. Therefore, Vision gives you the option of choosing what percentage of MIDI capacity you want continuous controllers to occupy.

If you are drawing a pitch bend for a patch whose pitch bend range is one whole step, you will probably find that a density of 1% gives satisfactory results. If its pitch bend range is two or three octaves, you may want a density of 20%. You should not be able to hear the individual steps (unless you want to, for some effect), but you should make the density as low as possible to be consistent with the sound quality you desire. Density can be set as low as 0.1% of MIDI capacity.

CHAPTER 6: Quantization

What is Quantization?

Quantization automatically moves notes toward the nearest beat boundary. For example, if you choose to quantize by eighth notes, your selection will move closer to the nearest eighth note boundary. (If you are familiar with graphics or page layout programs, think of quantizing as a "snap to grid" feature.)

There are different ways to quantize. Some only affect the way the music looks, and others only affect the way the music sounds. Some actually change the information in your files, and others make calculations during playback but don't change anything permanently. The advantage of using the latter type is that it is *non-destructive*—if you don't like the quantization settings you are listening to, you can turn off the quantization to revert to the way you recorded the MIDI data.

This chapter is a general discussion of quantization methods and types. While this chapter frequently refers to the Quantize window, it does not go into detail about its parameters. See *Chapter 19: The Quantize Window* on page 245 for detailed information about this window.

❑ Quantize Paradigms

When working in the Vision environment, you will often use the idea of "quantizing," although the features and commands you use may be dramatically different from one another. Here is a list of terms that use quantize technology, and a short description of each:

- **Playback Quantize**

  This type of quantize is *non-destructive*—it does not change MIDI data, but adjusts the playback to the quantize values you set. Each track can have its own playback quantize values. For more information, see "Using Play Quantize" on page 81.

- **Edit Quantize**

  Choose the **Quantize** command (from the **Do** menu) to permanently quantize any selection or track. (You can listen using Quantize Playback before permanently changing your MIDI data.) See "Permanently Quantizing MIDI Data" on page 83. Of course, you can undo a Quantize command.

- **Input Quantize**

  Choose this command to quantize your MIDI data as your record it.

- **Quantize Durations**

  Generally, quantizing only affects the beginning of notes. Using quantize durations will also move the *end* of notes toward the beat boundary. When it is on, it can eliminate unwanted space between notes (which can show up as a rest in the Notation window). Durations may be quantized with Playback Quantize or Edit Quantize.

- **Cursor Quantize** (for selecting, does not affect data)

  Using cursor quantize does not change your MIDI performance, but restricts the cursor selection and movement to quantized values. Using cursor quantize allows you to quickly and accurately move or select based on the grid you are using to quantize. For more information, see "Using Cursor Quantize" on page 89.

- **Notation Resolution** (for appearance, does not affect data)

  Using Notation Resolution will not change the way your music sounds—only the way it appears in the Notation window. This feature is covered in detail in "Notation Resolution" on page 91.

- **Export Quantize**

  You can quantize a track as you export it. This is useful if you are using a different application for notation. See "Quantizing for Notation" on page 90.

❑ Using Play Quantize

Each track can be set to different play quantize values. This does not change the MIDI data—Vision calculates the quantization during playback and you will hear the quantize results you define for each track.

Play Quantize is set up and defined at the bottom of the Tracks window. When you select a track in the Tracks window, the Play Quantize parameters will appear:

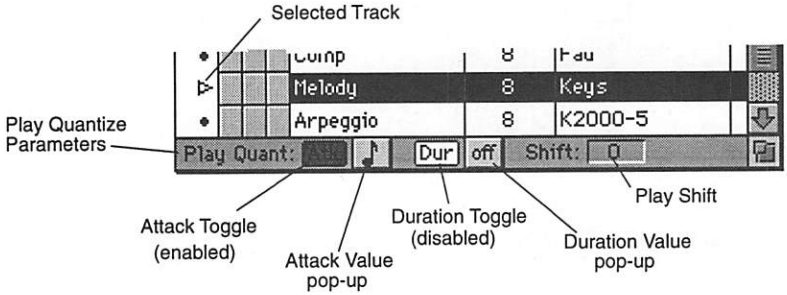


Figure 5.17: Play Quantize Parameters

Vision displays Play Quantize information only if one track is selected.

You can choose to use Play Quantize with attacks or durations. Play Quantize does not affect how the notes are recorded or how they are displayed. Therefore, it is normal for notes in a track with Play Quantize enabled to play before or after the line crosses them in the graphic window.

Attack Settings

Using a Play Quantize Attack setting will move the beginning of each MIDI event toward the grid you define in the Attack Value pop-up. To toggle play quantize attack on and off for each track, click the Attack Toggle (see Figure 5.17).

To set the quantize value, choose a note value from the Attack Value pop-up:

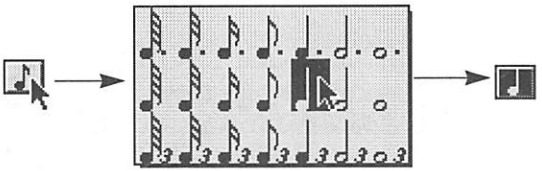


Figure 5.18: Choosing a Note Value

Duration Settings

To toggle play quantize duration on and off for each track, click the Duration Toggle, then choose a note value from the Duration Value pop-up (see Figure 5.18).

Play Shift

Setting the Play Shift will cause MIDI events to play back slightly early or late. It pushes the contents of the track by the number of units in the Play Shift field.

Some reasons to use Play Shift are:

- correct a patch that has slow attacks
- slight alterations in placement can add to the "feel"
- you can copy a track, lower its volume, and apply a Play Shift for a MIDI delay.

To set the Play Shift, select the track, then click in the Play Shift field and set a new value. If this number is positive, the events will play slightly after rest of the sequence—if the number is negative, the events will play slightly before the rest of the sequence. Legal values are between -480 and 480.

To permanently shift your MIDI data see "Permanently Shifting MIDI Data" on page 87.

❑ Permanently Quantizing MIDI Data

You can change your MIDI data permanently by using the **Quantize** command. After changing your data, you can immediately choose Undo from the Edit menu to change your data back.

There are several advantages of permanently quantizing your data over using play quantize:

- You can use Groove Quantize to align your data to a nonlinear grid.
- You can quantize a portion of the track. Play Quantize affects the entire track.
- You have access to all the parameters in the Quantize window.
- After you have permanently quantized a track, you will see a true representation of what you hear in the Graphic and List windows.
- Permanently quantizing data rather than having Vision calculate during playback increases your Macintosh processor performance.

You can quantize any selection. If you are using an Edit window and have selected a time range, quantizing will affect the time range within the edit points. You can also select a track or group of tracks, and quantize the entire time range of the track.

Edit Quantize Types

There are two quantize types in Vision:

- Grid Quantize

  This tightens your performances based on a linear grid. In versions of Vision 1.4 and earlier, this was the only Quantization mode available.
- Groove Quantize

  This will tighten your performances based on a Vision file with sequences that may not be linear.

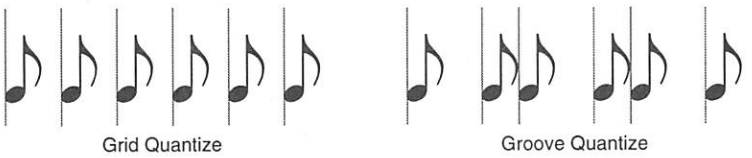


Figure 6.1: Two types of Quantize

Setting the Quantize Type

To set the Quantize Type:

1. **Choose Quantize from the Windows menu (or type option-G).**
   The Quantize Window will appear:
2. **Choose the desired setting from the Quantize Type pop-up.**

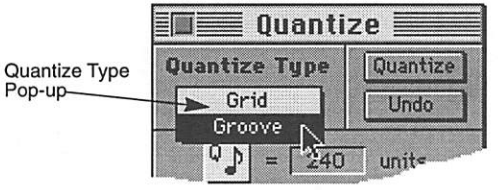


Figure 6.2: The Quantize window

For More Information: See *Chapter 19: The Quantize Window* on page 245 for a detailed explanation of each part of the Quantize window.

Setting the Edit Quantize Value

When you perform a quantize operation, the size is defined by the quantize value. The Grid Size pop-up and Groove Source pop-up allow you to set this value from many different locations, including the:

- Quantize Window
- Graphic Window
- Notation Window
- List Window

Setting this value in one window will update it in all applicable windows.

When you are using Grid Quantize, the Quantize Value pop-up contains a number of note sizes.

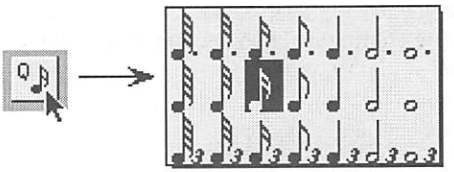


Figure 6.3: The Grid Size Pop-up

When you are using Groove Quantize, you will define the size of the grid by referring to a Vision track. There is a file called "Vision Grooves" that contains a number of Sequences and Tracks. When using Groove Quantize, the Quantize Value pop-up includes a list of available track sources:

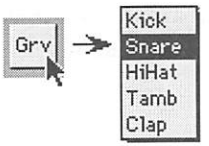


Figure 6.4: Groove Source Pop-up

Doesn't Affect Playback or Cursor Quantize. Changing this pop-up does not affect playback quantize, because each track can have a different playback quantize value. Cursor Quantize also works independently from this setting. See "Using Play Quantize" on page 81 and "Using Cursor Quantize" on page 89 for more information.

Shortcuts with the Quantize Value Pop-up

There are several shortcuts you can use with the Quantize Value Pop-up.

- Command-click to toggle between Quantize Types.
- Shift-click in Groove mode for a pop-up of groove sequences.
- Option-click to open the Quantize window.

Using the Quantize Menu Item

The **Quantize** item (in the **Do** menu) will change depending on the current selection. When you have selected a track, it will read "Quantize Track." When you have selected a time range in one of the Edit windows, it will read "Quantize Selection."

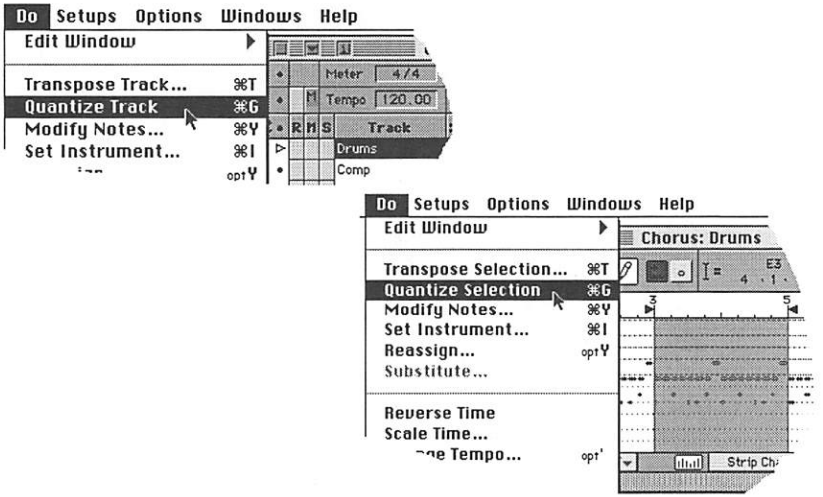


Figure 6.5: The Quantize Menu Item changes depending on the current selection

Choosing this menu item will cause the current selection to be quantized according to the parameters you have set in the Quantize Window (see page 245).

Key Equivalent: You can type command-G on your Macintosh keyboard instead of choosing this menu item.

Using the Quantize Buttons

Rather than choosing the menu item, you can click the Quantize button in the Quantize window:

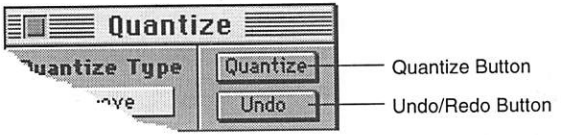


Figure 6.6: The Quantize Buttons

Clicking the Quantize button is exactly like choosing **Quantize** from the **Do** menu (see page 86). Clicking the Undo/Redo button is exactly like choosing **Undo** (or **Redo**) from the **Edit** menu (see page 310). It will undo any edit, not just Quantize commands.

These buttons are located in the Quantize window so you can quickly apply quantizations and listen to the results.

Permanently Shifting MIDI Data

If you find a Play Shift setting that you like, you can permanently shift the data so that the screen representation more accurately represents what you hear. There are a few ways to permanently shift the data—here is one method:

1. **Make the selection you wish you shift.**
   You can select a track in the Tracks window, or a time range in one of the Edit windows.

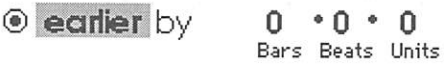
2. **Choose Move Events from the Edit menu.**
   You can also type command-comma. The Move Events dialog will appear.

Figure 6.7: The Move Events Dialog

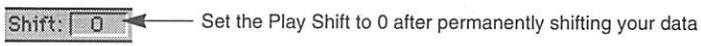
   For complete information on this dialog box, see "Move Events-," on page 320.

3. **Set the parameters in the Move Events dialog to match the Play Shift settings.**
   You can use this dialog box to move events further than 480 pulses. If you have a positive Play Shift setting, make the Move Events dialog read "later."

   If you have a negative Play Shift setting, make the Move events dialog read "earlier."



4. **Click OK.**
   The data will be permanently shifted.
5. **Change the Play Shift parameter to 0.**
   If you don't complete the last step, your data will be shifted again during playback, and this is probably not desirable.



Using Cursor Quantize

Cursor Quantize allows you to make precise selections and edits. When Cursor Quantize is on, all cursor movements will be restricted in time to the amount you specify in the Cursor Quantize pop-up.

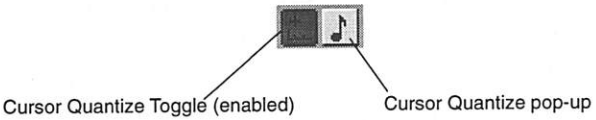


Figure 6.8: Cursor Quantize Settings

You can use Cursor Quantize in Track Overview, Graphic, and Notation windows. When you change the Cursor Quantize setting in one window, it changes in all other windows.

To turn on Cursor Quantize, click the Cursor Quantize Toggle so it is enabled. The Cursor Quantize pop-up will show the resolution of quantization for the cursor. You can change this resolution by choosing a new value from the pop-up (see Figure 5.18 for an illustration). To turn off Cursor Quantize, click the Cursor Quantize Toggle so that it is disabled. The Cursor Quantize pop-up will read "off" when Cursor Quantize is disabled.

Key Equivalent: You can type Shift-' (quote) on your Macintosh keyboard to toggle Cursor Quantize on and off.

When you set Cursor Quantize to quarter notes, all cursor selections and movements will be restricted to counter values that end in 0 (i.e., 1•1•0, 43•3•0, etc.). This is an excellent way to move MIDI data a precise number of beats.

When you set Cursor Quantize to whole notes, cursor movements will be restricted to entire bars, regardless of the time signature. It's a good idea to use this setting when you are inserting or deleting entire bars, using **Insert Blank Time** (see page 318) or **Delete Time** (see page 319).

❑ Quantizing for Notation

How accurately should the music notation reflect the MIDI recording? It turns out that the answer is "not as accurately as it can." Does this surprise you?

Human beings read and interpret music. When a computer tries to do the same thing, the result can be mechanical and predictable. This is why it's not always best to quantize all your performances at 100%—it can be difficult to go back and try to add the "human touch" to a computer-generated drum pattern.

Vision is first and foremost a sequencer. It will accurately record your performance and play it back. When you are in a Notation window, Vision interprets the MIDI data and displays it using standard notation. It is possible for Vision to interpret the data in *too much* detail, making the music hard to read.

For example, if you play a chord on a MIDI guitar, it's very likely that all notes do not occur simultaneously. This is easy to view in a Graphic window, and it probably sounds fine. In fact, if you quantize it, you may lose something you like about it. It may not sound natural anymore.

In Graphic windows, you want to see the detail of each note's attack. But in a Notation window you want to see a chord—all the notes occurring at once. This is the paradox that occurs while using a computer for performance and notation. It calls for compromise.

There are many ways to make this compromise—using quantize (or Notation Resolution) is just one. You may want to see "Tips for Good-Looking Scores" on page 102 if you are using Vision for notation. If you are using a notation application, see "Exporting to a Notation Application" on page 92.

Notation Resolution

The Notation Resolution pop-up menu allows you to change the quantization level of your notation without changing the way it sounds. This is necessary for creating clear scores, because there are often subtle differences in the way music is played and how it appears on the page.

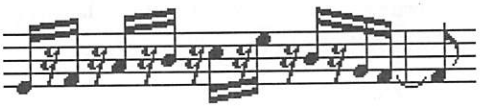



Figure 6.9: Music with Notation Resolution set to 16th notes.

Figure 6.10: The same music with Notation Resolution set to eighth notes.

To set the Notation Resolution, choose a note value from the Notation Resolution pop-up:

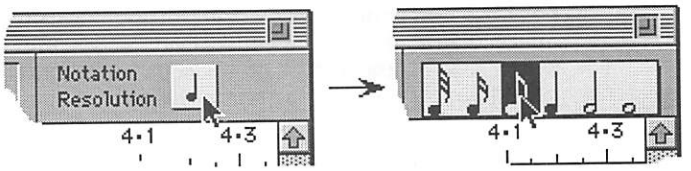


Figure 6.11: Choosing the Notation Resolution level

Exporting to a Notation Application

When you use Vision to prepare data for notation in a different application, you may want to quantize the data before you export it—this can result in better-looking scores.

You can use the **Export Quantize** command in the **File** menu to set the quantize level for exporting. This will only affect the data as it is being exported—it won't change the Vision file.

To quantize your data while exporting it:

1. **Select the tracks for which you want to set the export amount.**
2. **Choose Export Quantize from the File menu.**
   The Export Quantize dialog will appear.
3. **Set the parameters in the Export Quantize dialog.**
   For a description of these parameters, see "Export Quantize" on page 305.
4. **Click OK.**
5. **If necessary, repeat Steps 1 through 4 for other tracks.**
6. **Choose Export (type option-X) or Export to Clipboard from the File menu.**
   You can now go to your notation application and open the MIDI file.

Export Information. For more information on using the export commands, see the area of *Chapter 26: The File Menu* starting on page 303. For troubleshooting tips on using another application for notation, see "Troubleshooting with Notation Applications" on page 106

CHAPTER 7: Printing Your Music—Special Considerations when Using Notation

You can print any number of tracks in standard music notation. Printing is only available when a Notation window is active—the contents of the active Notation window determine the tracks that will print.

❑ The Print Preview Window

Use the Print Preview window to see what your document will look like when you print it. You can also use this window to add a title, comments, and author name, and change basic layout of the printed page.

To open the Print Preview window, choose **Print Preview** from the **File** menu.

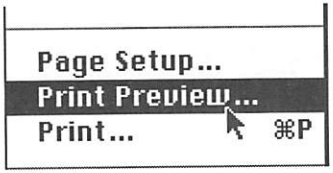


Figure 7.1: This menu item is only available when a Notation window is active.

The tracks in the Print Preview window are the same tracks in the current Notation window. If you show or hide a track in the Notation window, the Print Preview window will automatically update. For information on showing and hiding tracks, see "Showing and Hiding Tracks in a Notation Window" on page 19.

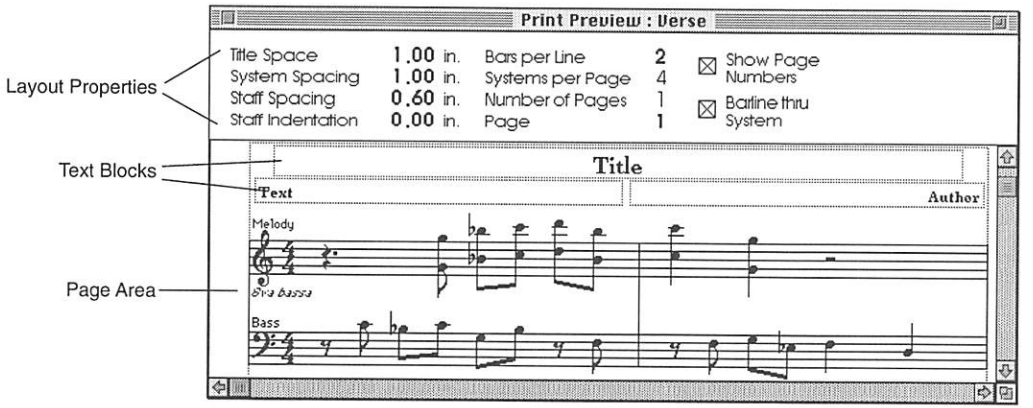


Figure 7.2: The Print Preview Window

The music will be shown in the Print Preview window as it will appear on the printed page. The music staff lines will break in the same place. This is unlike the Notation window, where the music scrolls continually—there are no line breaks in the Notation window.

Page Properties

At the top of the Print Preview window, there are fields you can edit to determine how Vision will print your music.

The Systems per Page and Number of Pages cannot be changed directly—they are calculated using the other settings that you can edit. All other properties can be edited.

Title Space

This is the amount of space between the top of the page margin and the top of the first staff.

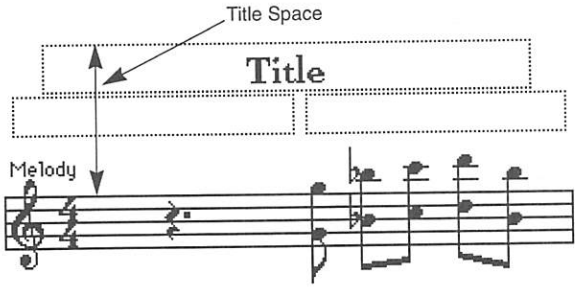


Figure 7.3: Title Space

System Spacing

A **System** is a line of music, or more specifically, a group of staves that are played at the same time (see also "System" on page 102).

The **System Spacing** is the amount of space between the bottom of one system and the top of the system below it.

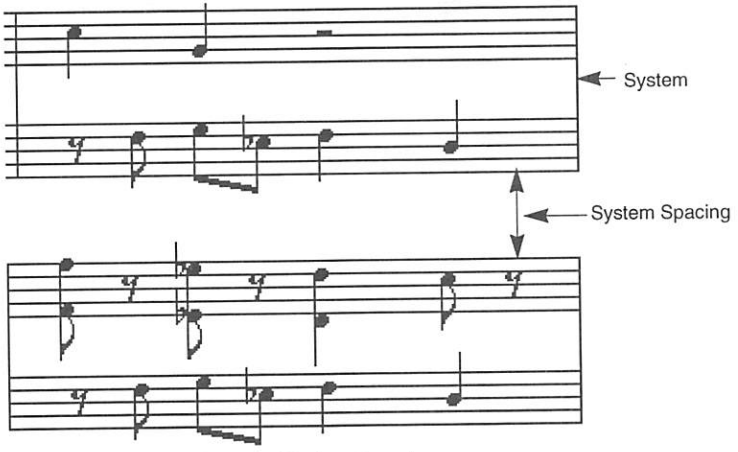


Figure 7.4: 2-Staff System and System Spacing

Staff Spacing

This is the distance between staves within the same system.

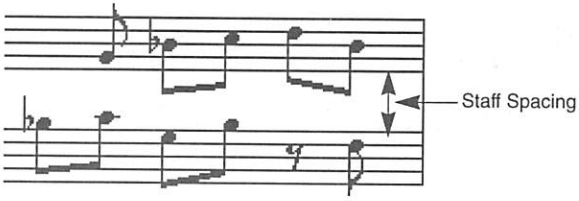


Figure 7.5: Staff Spacing

Staff Indentation

This is the distance between the margins set on your printer and the beginning and ending of each staff.

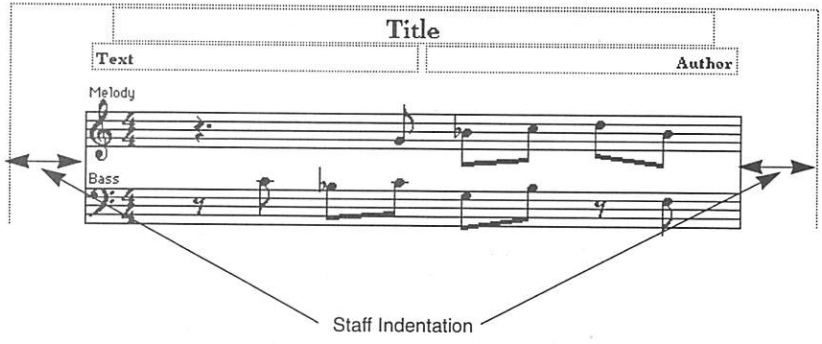


Figure 7.6: Staff Indentation

Bars per Line

This is the number of measures that will be printed for each system of music.

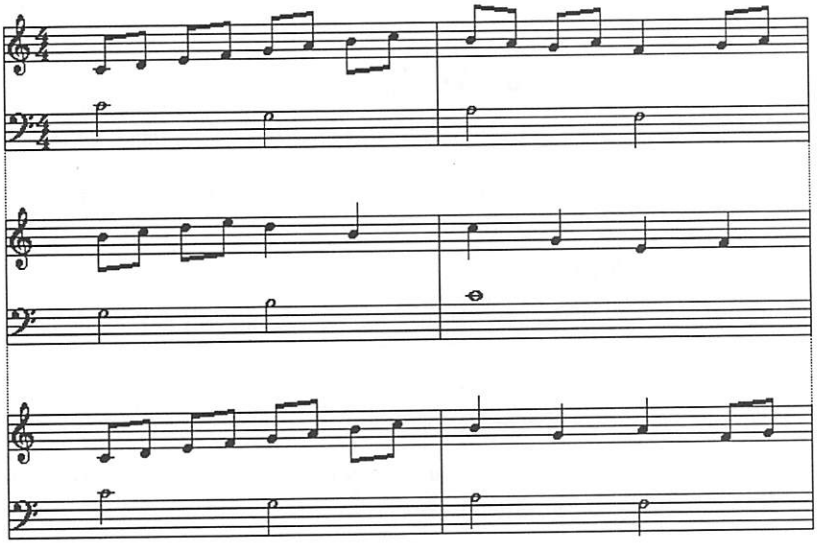



Figure 7.7: Two Bars per Line

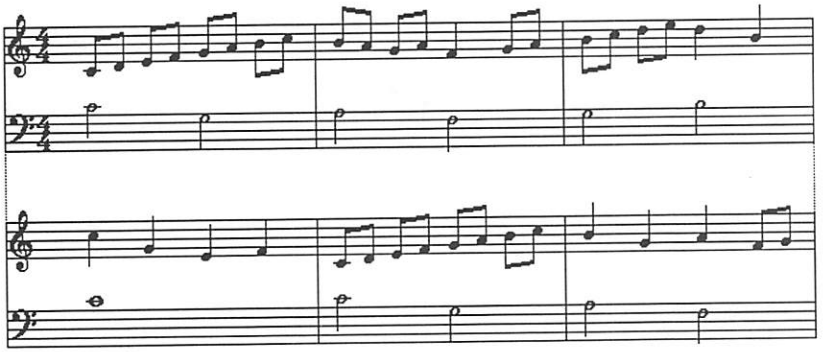



Figure 7.8: The Same music—Three bars per Line

Systems per Page

This is the number of systems that will be printed on each page. You cannot change this number directly—it is determined by the numbers you chose for the Title Space, System Spacing, and Staff Spacing.

Number of Pages

This is the number of pages that will be printed if you send the document to the printer. You cannot change this number directly—use it to see how changing other properties will affect the number of pages that will be printed.

Page

This shows the page that is currently displayed. If you change this number, you will change the page that is being displayed.

Show Page Numbers

If this box is checked, page numbers will be displayed and printed in the lower right corner of each page.

If this box is unchecked, no page numbers will be displayed or printed.

Barline thru System

Checking this option will cause the barline to continue through each staff in the system. Leaving this box unchecked will cause the barline to stop at each staff. Depending on your score, this can make your music more legible.

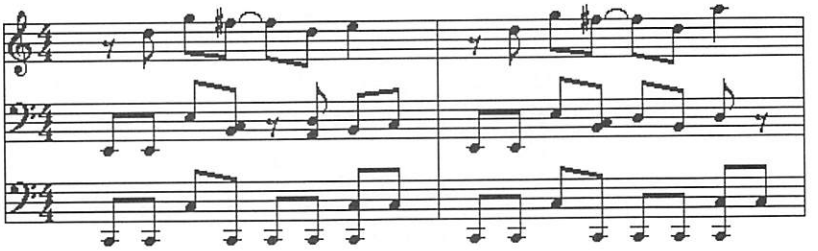



Figure 7.9: Barline thru System on

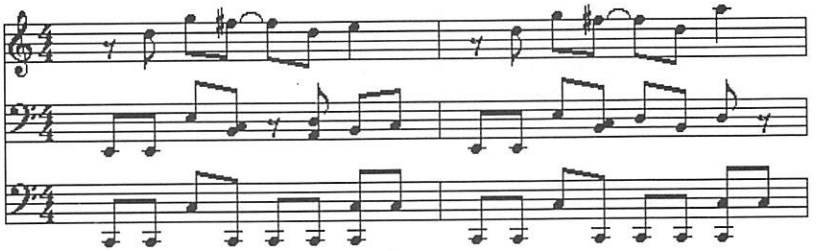



Figure 7.10: Barline thru System off

Units of Measurement

You can view all the measurements in either inches or centimeters. To change a unit of measurement, click on the unit of measurement you wish to change.

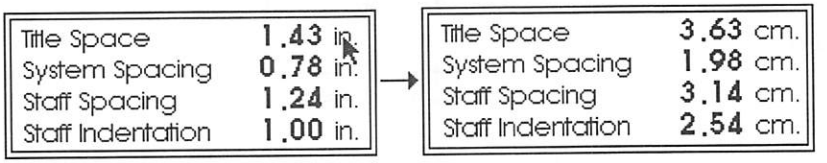

Title Space 1.43 in.
System Spacing 0.78 in.
Staff Spacing 1.24 in.
Staff Indentation 1.00 in.
Title Space 3.63 cm.
System Spacing 1.98 cm.
Staff Spacing 3.14 cm.
Staff Indentation 2.54 cm.

Figure 7.11: Changing inches to centimeters

Adding Text to a Page

There are three text blocks that you can use to add text to the top of the first page. To add text, click in one of the text blocks and type whatever you wish. These text blocks will only appear on the first page.

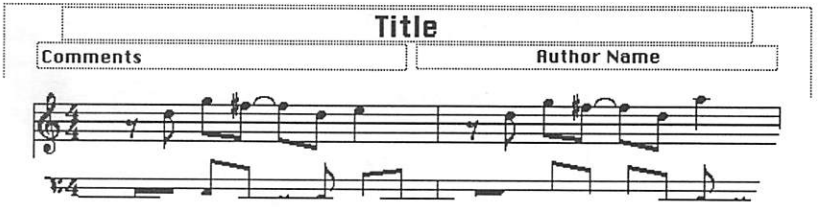



Figure 7.12: The three text blocks

Changing the Font of the Text

You can change the font of all three text blocks by selecting a font from the **Font** menu. All the fonts installed in your System will appear in this menu (except Sonata).

❑ Page Setup

Using the settings in the Page Setup dialog box will allow you to have greater control over how your music will print. You can use this dialog box to print landscape (wide), or print using a reduction of.

To open the Page Setup dialog box, choose **Page Setup** from the **File** menu.

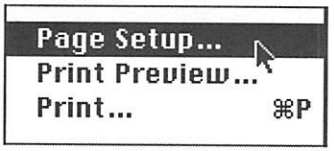


Figure 7.13: Choosing Page Setup

The Page Setup dialog will appear, and will differ in appearance depending upon the type of printer, printer driver, and system that you're using. See your printer documentation for more information.

A Brief Discussion of Notation Terms

Here are some more terms you need to know in order to understand Vision's notation features.

Grand Staff

The grand staff is simply two staves, consisting of a treble clef and a bass clef.

If a track contains mostly low notes, Vision will notate the track in a bass clef. If a track contains mostly high notes, Vision will notate the track in a treble clef.

If the track contains both high and low notes, Vision will use a grand staff. This criteria is based on two cutoff points—if the track contains notes higher than F above middle-C *and* it contains notes lower than G below middle-C, Vision will use a grand staff.

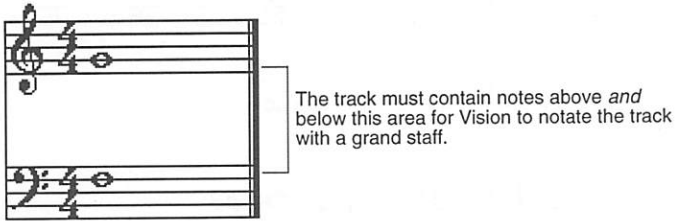


Figure 7.14: The Grand Staff

Part

Most of the time, each Vision track will constitute one part. A part is designed for one instrumentalist to read and play. If you are printing your music with the intention of giving it to musicians to play, then you will probably be printing separate parts.

Often, you will combine multiple tracks to create a single part. For example, you can select both a bass track and a melody track, then combine them to create a single piano part, or lead sheet.

System

A system contains all the tracks that are selected and will be printed. A system can be one staff, if it contains one track with limited note range—or it can be many staves if many tracks are selected.

Voice

If there is more than one voice, it means that Vision has detected two or more distinct rhythmic patterns within the same track.

Several voices per staff are automatically created by Vision if there are overlapping rhythms within the Track. Whenever possible, the stems and ties will automatically point in opposite directions so they do not collide.

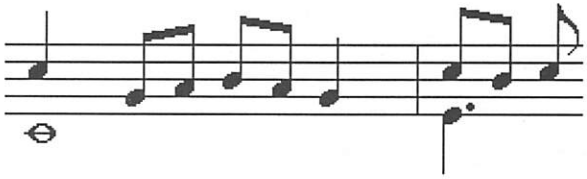



Figure 7.15: Two-voices in one Track

❑ Tips for Good-Looking Scores

There are many controls, commands, and settings that work together to affect the way your music looks. This section will focus on helping you use the features that help you get the best notation.

Use Notation Resolution. See "Notation Resolution" on page 91. Use this feature to set the smallest note value and quantize level that Vision displays in the Notation window (and the Print Preview window).

Changing the Order of Notation Tracks

The order that tracks print is the same order as their placement in the Tracks window. If you want to change the order that tracks print, change the placement in the Tracks window. The Print Preview and Notation windows will automatically update:

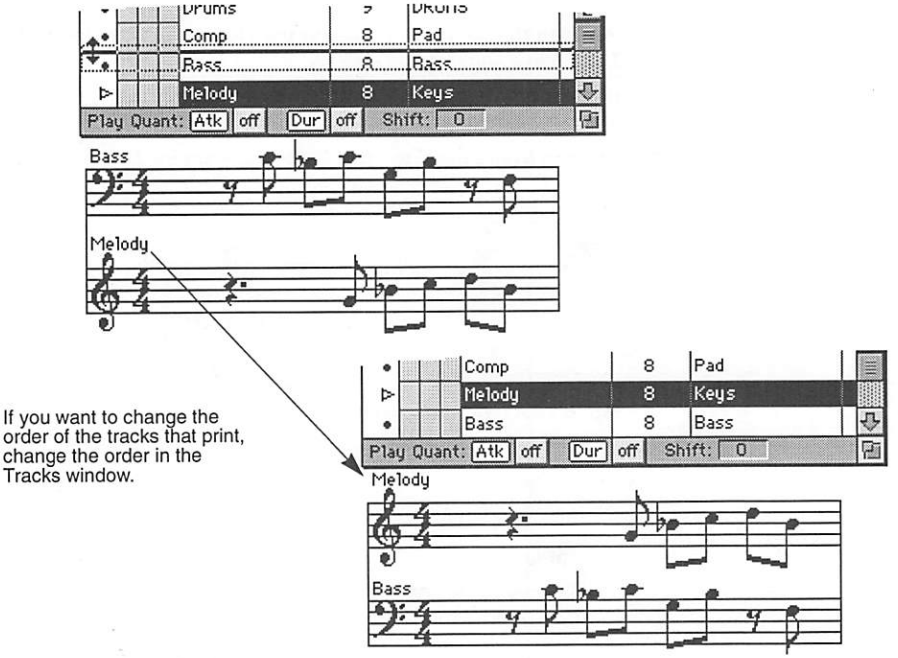

Drums
Comp 8 Pad
Bass 8 Bass
Melody 8 Keys
Play Quant: Atk off Dur off Shift: 0
Bass
Melody
If you want to change the order of the tracks that print, change the order in the Tracks window.
Comp 8 Pad
Melody 8 Keys
Bass 8 Bass
Play Quant: Atk off Dur off Shift: 0
Melody
Bass

Figure 7.16: The relationship between Track order and printing

Shifting the Music by Octaves

Sometimes, you will record a track that is either extremely high or low in pitch. This may sound fine, but when you try to view you music in a Notation window you see that it contains too many ledger lines. You can use the octave shift feature to change the music's notated octave without changing the MIDI data.

1. **Position the cursor underneath the clef of the staff you would like to shift. The cursor will change into an "8."**
2. **Press and hold the mouse button down.**
   The Octave Shift pop-up menu will appear.
3. **Choose from one of the five Octave selections in the pop-up.**

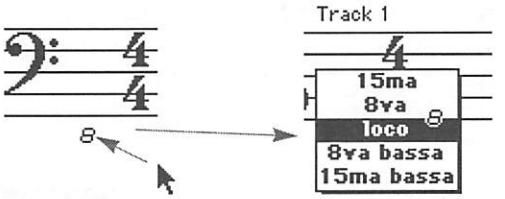


Figure 7.17: The Octave Shift pop-up menu.

You can choose a different octave for each track. Each octave shift setting causes the music to be notated in a different octave.

- 15ma
  The music is notated two octaves lower than it actually sounds.
- 8va
  The music is notated one octave lower than it actually sounds.
- loco
  The music is notated in the same octave it is played.
- 8va bassa
  The music is notated one octave higher than it actually sounds.
- 15ma bassa
  The music is notated two octaves higher than it actually sounds.

Notation Troubleshooting

Vision Notation Troubleshooting

"I have too many extra voices."

Look for places where extra voices are generated due to durations or attacks not coinciding and see if you can make them coincide without losing the sound you want. Lower the notation resolution if you can.

"I'm playing swing, and all my eighth notes are showing up as triplets."

If swung eighth notes turn out as triplets and you want straight eighths, try moving the second note of each group a little to the left in a Graphic window, or quantizing the music to eighth notes.

"Notes are printing off the page."

Before printing, check at the bottom of the page in the Print Preview Window that notes aren't outside the margin or covering the page number.

"When trying to print, I get a dialog box telling me there's a printing problem"

Check to make sure that the printer port isn't being used for MIDI communication.

Also, if your printer requires AppleTalk, check to see if AppleTalk is on or off. If it's off, use the Chooser to turn it back on (you can turn it back off when you're through printing and need to do more MIDI recording).

"It's barely more than a page. Can't I make it fit?"

Use either the **Bars per Line** field, or the three spacing fields (**Title Space**, **System Spacing**, **Staff Spacing**) in the Print Preview window to make the music fit on one page. This may cause the music to collide, or look too close together.

If you can't fit the desired number of bars to the line without collisions, use the settings in the Page Setup dialog box to print either landscaped or scaled.

"There's a rest between every note!"

You may need to adjust the Notation Resolution (see page 91). Don't use higher resolution than necessary. If there's only one real 32nd note but lots are generated, consider using 16th resolution and losing visibility of the 32nd.

You can use the legato tool in the Strip Chart to elongate every note, and essentially erase the space between notes (see page 68). If notation is important to you, consider using Quantize Durations (page 249). Quantizing MIDI data in Piano Roll will usually make notation look better.

"Why are there so many ledger lines?"

If notes are generally above or below staff, try using 8Va (see page 104).

"If my music looks good it sounds terrible, and vice-versa."

There are some cases where a good-sounding piece cannot be well-notated without considerable editing. If this happens to you, consider making two copies of your music—one to optimize for notation, and one to play.

"I'm using a laser printer. Is there a way I can make the music characters look smoother?"

Vision ships with a bitmap version of the Adobe Sonata font for displaying and printing music notation. If you have a laser printer, you may wish to install the outline version of Sonata and Adobe Type Manager (ATM). This will give your printed output a smooth quality that is not available with the bitmap version. Contact your local Macintosh software dealer or mail order service for information on obtaining this outline font.

Troubleshooting with Notation Applications

Here are some common problems and solutions you may experience when exporting data to a notation application.

"There are many small notes and tuplets tied together."

Use a larger quantize setting before exporting your data. Also consider using Quantize Durations (page 249).

"Large sections appear to be missing from the score."

You must capture a sequence before you export it. Vision will ignore subsequences that aren't captured during export, and this could cause large sections to "disappear" from your score. Use **Export to Clipboard** in the **File** menu to automatically capture the tracks.

"I have chords covering many octaves in a single staff."

Use **Split Notes** in the **Do** menu (or any other technique you choose) to split the MIDI information into different tracks before you export it. See page 355 for more information on splitting notes.

CHAPTER 8: Understanding and Using Subsequences

What is a Subsequence?

Vision allows you to display entire sequences as single events called subsequences. Essentially, a subsequence is exactly the same as a normal sequence—except that it is contained inside of another sequence.

When you edit subsequences, they will appear as single events. You can see this in the Track Overview and List windows, where the name of the subsequence is displayed rather than the individual MIDI events.

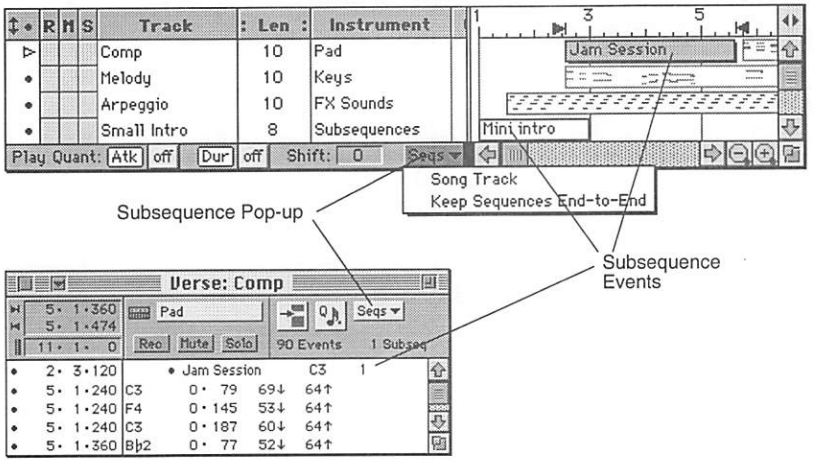


Figure 8.1: Subsequences are displayed as single events

❑ Why Use Subsequences?

Subsequences allow several existing sequences to be strung together into a song. They also allow you to break an existing linear sequence into pieces that you can then rearrange.

❑ Stringing Together Existing Sequences

Recording Subsequences

If you type a sequence's Key Assignment while you are recording, a subsequence event will be recorded on the current track. You can do this while you are Step Recording for precise placement, or you can record subsequences in real-time.

If the Begin Record toggle is set to Wait for Note, Vision will begin recording when you type the sequence's Key Assignment. This will also work if you trigger the sequence with a MIDI event, via either one of the Trigger modes or MIDIKeys.

Copying and Pasting Sequences

If you copy a sequence in the Sequences window, you can paste the sequence into an Edit window—it will show up as a subsequence.

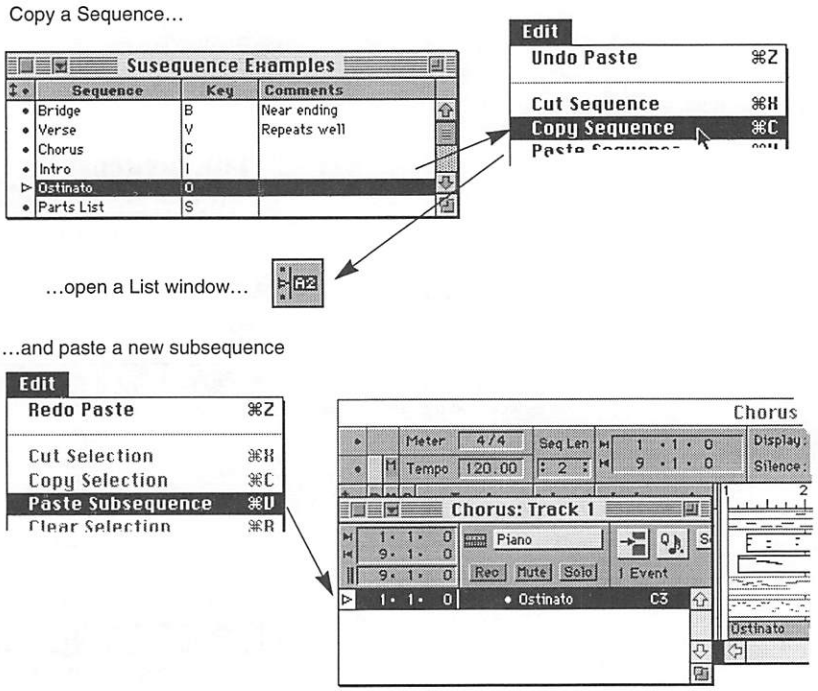


Figure 8.2: Pasting a Sequence in a List window to create a subsequence

Copying and Pasting Subsequences

You can copy a subsequence event from an Edit window and paste it in the Sequences window. This will create a new sequence which contains all the information of the old subsequence.

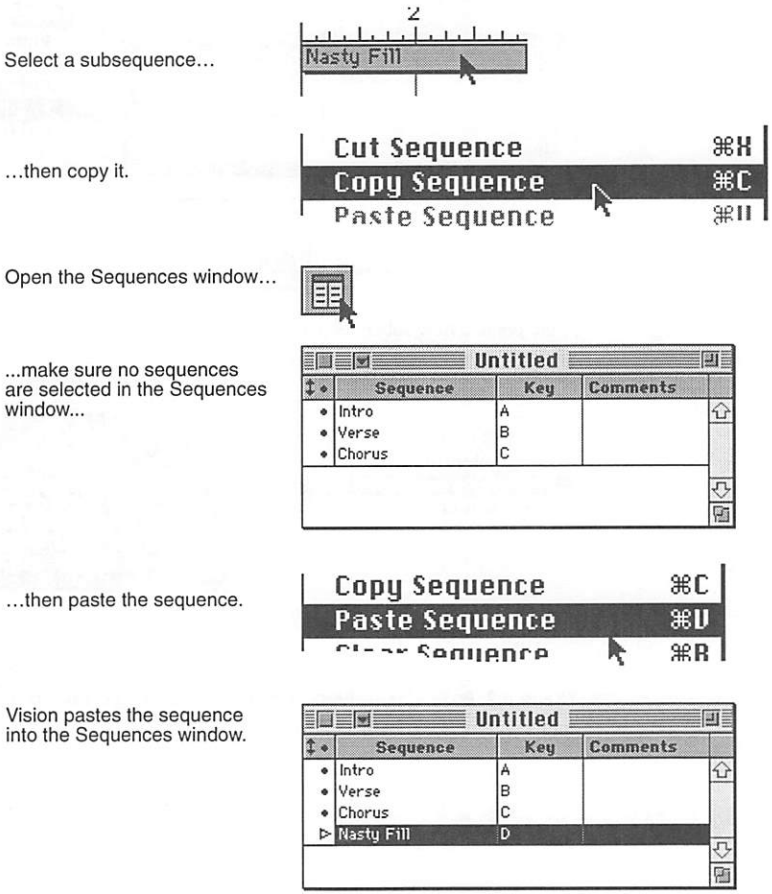


Figure 8.3: Pasting a subsequence into the Sequence window

❑ Breaking a Sequence Into Parts

Making Subsequences

Many selections may be turned into a subsequence using the Make Subsequence command. Vision will put this subsequence into the first selected track. Vision will automatically name this subsequence the first letter that isn't already taken.

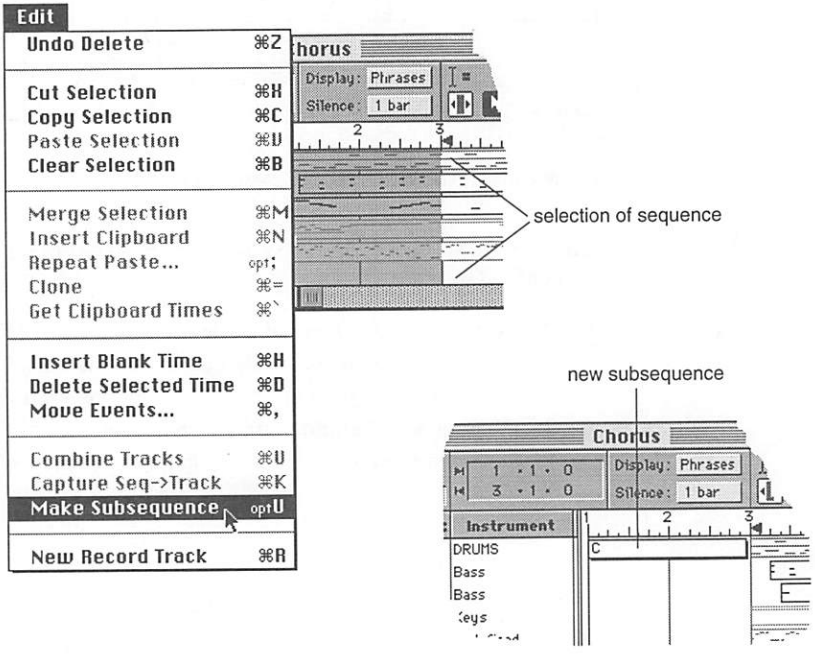


Figure 8.4: Using the Make Subsequence Command

To use the **Make Subsequence** command, one of the following must be true:

- None of the selected tracks are looped, or
- All selected tracks have the same length and are all looped, or
- The Edit In point is the beginning of the sequence, and the Edit Out point is after the end of the longest looped track.

Vision alerts you if you try to create a subsequence that does not satisfy one of the above conditions.

Using Subsequences to Create Loops in the Middle of a Sequence

What if you want to create a sequence that has a loop that begins and ends in the middle of a sequence? For example, assume you want to create a four bar loop that begins at bar 9 and plays for 16 measures (as shown in Figure 8.5).

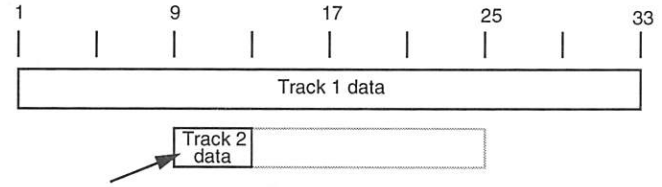


Figure 8.5: Looping in Middle of Sequence Example

You can use subsequences to create loops that start in the middle of a sequence. To do so:

1. **Create a subsequence out of the four bars of Track 2 data.**
2. **Open the Tracks window for the new subsequence.**
3. **Click the Track Length loop indicator to loop the four bars.**
4. **Set the Sequence Length of the new subsequence to 16 bars.**
   This causes the four bar track to loop for the full sixteen measures of the subsequence.

Unmaking Subsequences

This section describes how to unmake a subsequence—this is not the same as deleting it. When you unmake a subsequence, Vision will take the subsequence information and place it in the parent sequence.

If you select a subsequence event, you can choose **Unmake Subsequence** from the **Edit** menu. This will merge the track information in the subsequence with the same tracks (if they exist) in the current sequence.

Vision looks at the existing tracks for similarities. If it finds:

- tracks with the same track names, and
- tracks with the same play quantize settings, and
- tracks that are assigned to the same instrument

...then it merges the subsequence's track information into its parent.

For each track in the subsequence that does not have a matching track in the parent sequence, Vision adds a new track at the bottom of the parent's Tracks window.

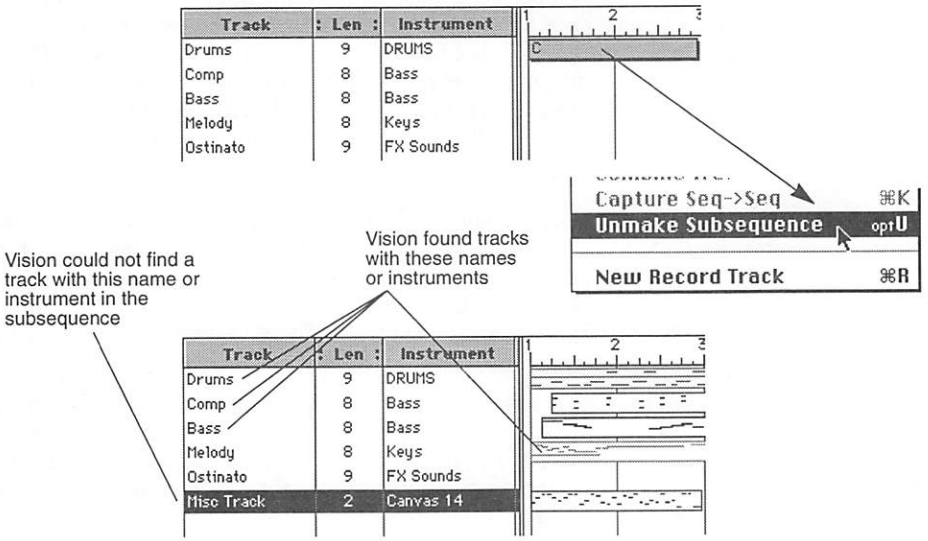

Track
Len
Instrument
Drums 9 DRUMS
Comp 8 Bass
Bass 8 Bass
Melody 8 Keys
Ostinato 9 FX Sounds
Capture Seq->Seq ⌘K
Unmake Subsequence optU
New Record Track ⌘R
Vision could not find a track with this name or instrument in the subsequence
Vision found tracks with these names or instruments
Misc Track 2 Canvas 14

Figure 8.6: Using the Unmake Subsequence command

There are a couple caveats when unmaking subsequences with looped tracks:

- If you unmake a subsequence that contains looped tracks and that starts at 1•1•0, then the unmade looped tracks will loop as long as the parent sequence plays.
- If you unmake a subsequence that contains looped tracks and that does not start at 1•1•0, then the unmade looped tracks will not loop in the same way as the original subsequence.

CAUTION: If, in the Track Overview area, you select a subsequence block that overlaps other events, Vision selects the overlapped events as well as the subsequence. When any events other than a subsequence are selected, the command reads "Make Subsequence" rather than "Unmake Subsequence". To isolate the subsequence, from the other events, open a List window and select *only* the subsequence event.

❑ Arranging Subsequences

Normally, a subsequence acts as part of the sequence it's contained in. Even though a subsequence has meter and tempo tracks, these tracks are usually ignored when Vision plays the sequence containing the subsequence. Only the meter and tempo information in the top-level sequence are used when playing that sequence. For example, if the subsequence has a tempo of 150 and the top-level sequence's tempo is 120, the events in the subsequence will play at a tempo of 120.

A subsequence is also displayed in edit windows in terms of its place in the top-level sequence. For instance, if the subsequence starts at bar 5, all of its edit windows will display barlines starting at bar 5, using the top-level sequence's meter. The SMPTE times shown will all be based on the top-level sequence's SMPTE offset and tempo track. There are two exceptions to this:

- If **Local Subseq Times** is checked in the **Options** menu, then editing and playing a subsequence works independently, as if it were a separate top-level sequence. Its SMPTE offset, markers, meter, and tempo will all affect display and playback. However, even in this case, playing the top-level sequence will still ignore all of the information in the subsequence meter and tempo track.
- If a subsequence's **Sync** setting is **Off** in the Tracks window, then its tempo will be used when the events in the subsequence play (however, the SMPTE times shown in edit windows will still use the top-level sequence's tempo track unless **Local Subseq Times** is checked).

Rearranging Subsequences

Notice that if you click on one subsequence event, the Edit In point is set to the start time of that event and the Edit out point is set to the end time of that event. This means that the selection will be exactly the size of the entire subsequence (or subsequences if you select more than one).

If you choose **Delete Selected Time**, the entire time taken up by the selected subsequences will be removed from the track and copied onto the Clipboard. To put the subsequences in another place, click on another existing subsequence and choose **Insert Clipboard**. The copied subsequences will be inserted before the selected one, which will be moved to a later point.

If you use one of the similar commands in the Edit menu, you may not get the results you expected—see *Chapter 27: The Edit Menu* for complete information on **Cut, Copy,** and **Merge.**

Naming Subsequences

To rename a subsequence, you must be in a List window. If you're in a Tracks window, option-double-click the subsequence block to open the List window to the selected subsequence. Simply select the name and type a new one.

Editing Subsequences

Subsequences may be edited like any other Vision sequence. Remember that once you create a subsequence from a sequence, the subsequence becomes independent of the main sequence in the Sequences window. For example, if you have Sequences A, B, and C and string them together inside Sequence S, changing *Sequence* A in the Sequences window won't change *Subsequence* A in Sequence S. To make *Subsequence* A reflect any changes made to *Sequence* A, you must paste the edited Sequence A over the Subsequence A inside Sequence S.

You may want to delete the main A, B, and C sequences and just edit the subsequences directly from S. To do this, double-click the subsequence block in the Track Overview (or double-click the subsequence selector dot in the List window). A Tracks window for the subsequence will open and you can modify the subsequence from there.

Subsequence Clones

If you copy a subsequence to a different location in the same track, any changes you make to one subsequence will change all other copies of the subsequence.

Sometimes, however, you might want to create a copy of a subsequence and change it *without* changing other copies of the subsequence. Choose **Clone** from the **Edit** menu to create an independent copy of a subsequence. Any changes you make to a cloned subsequence will not change the original subsequence.

For more information on cloning, see "Cloning Subsequences" on page 317.

Song Track & Subsequence Pop-Up

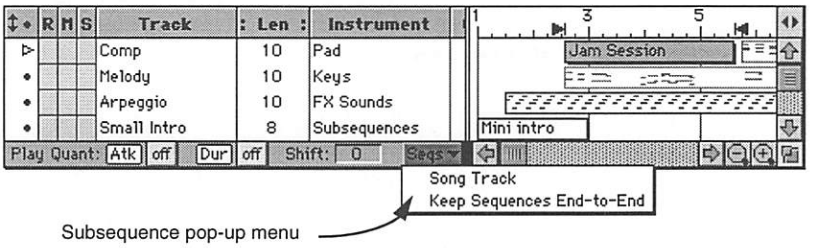


Figure 8.7: Subsequence Pop-Up Menu

When you have selected a track in the Tracks window, or if the open List window contains subsequences, Vision displays the button for the Subsequence pop-up menu. The options contained in the pop-up can be toggled on and off and they work independently of each other.

Song Track

Because Vision, when it is playing, ignores the meter and tempo tracks of subsequences, it offers you a way to automatically copy all of the meter, marker, and tempo information in a subsequence up to the top-level sequence. This capability is called Song Track. One track in the sequence (you can have only one) is designated as "the song track" by checking **Song Track** in the Subsequence pop-up menu. The meter, marker, and tempo are copied to the top-level sequence at the time when Song Track is checked and is updated whenever the song track changes.

Keep Sequences End-to End

When both **Song Track** and **Keep Sequences End-to-End** are checked, Vision assumes that the selected track consists entirely of subsequences that are to be butted together end-to-end. It will move the subsequences around in the track every time it is edited to maintain this butting. Inserting or deleting subsequences, or changing their length or meter will cause later subsequences to be moved.

The meter and tempo tracks of the top-level sequence automatically change to match the meter and tempo tracks of all the subsequences in the Song Track. All meter, tempo, key, and marker events in the subsequences will therefore end up in the top-level sequence. In addition, a marker will automatically be generated at the beginning of each subsequence with the name of the subsequence.

This setting is useful when you want to maintain an overall composition made up of sections, particularly if they have different meters.

When **Song Track** is checked but **Keep Sequences End-to-End** is unchecked, then Vision acts as described above, except:

- Vision will *not* move your subsequences at all. They can overlap or there can be gaps.
- Vision will *not* copy meter information from the subsequences into the top-level sequence. Since you might place your subsequences in odd locations, and meter events are not allowed on odd locations, Vision is cautious and does not copy meter information at all.

Vision will still copy tempo information and markers from the subsequences to the top-level sequence, and will still automatically create markers where each subsequence begins.

This setting is useful if you have sequences placed at specific SMPTE times, but they have different tempos which you want to automatically take effect.

Nested Subsequences

A subsequence can contain other subsequences. This can result in nested subsequences (a subsequence within a subsequence).

To determine the nesting of a subsequence, command-click the title bar of the Tracks window (or any Edit window). A pop-up will show you the heritage of the subsequence. Choosing from the pop-up will open the Tracks window for that Sequence (or a List window for a track).

For example, assume you have a sequence called "Chorus" that contains a track called "Track 1". Within "Track 1" is a subsequence called "Ostinato". Command-clicking the title bar of the Ostinato subsequence Tracks window produces a pop-up showing the heritage of that subsequence (as shown in Figure 8.8).

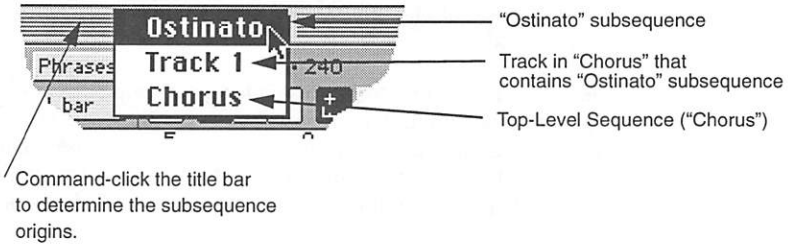


Figure 8.8: Nested Subsequence Example

❑ Subsequences in the List Window (Details)

You can view Subsequences in the List window and Track Overview. In Track Overview, you can drag-and-drop the block as you would any other block—see "Track Overview—Viewing and Editing Blocks" on page 191.

Editing Subsequences in a List Window

In the List window, there are two ways to select the subsequence—you can select the subsequence event, or the subsequence itself. There are two different selector dots in the List window for this purpose.

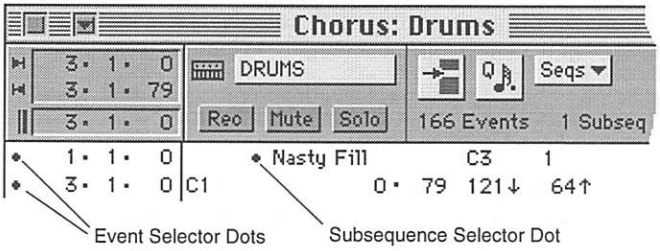


Figure 8.9: Two Subsequence Selector Dots in the List window

Selecting the subsequence selector dot is similar to clicking the sequence selector dot in the Sequences window (i.e., double-clicking will open a tracks window for the subsequence, etc.) Selecting the event is like selecting any other event in the List window—see *Chapter 17: List Windows* for details.

Transposing Subsequences

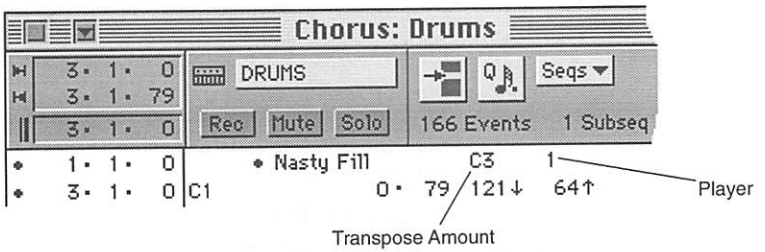


Figure 8.10: You can transpose subsequences in the List window

In the List window display of a subsequence event, there are two more items to the right of the subsequence name. These are the subsequence's Transpose value, and the Player. If you would like a subsequence to play at a different pitch, you can change its Transpose value. Of course, you could also transpose all of its tracks, but if the same subsequence occurs more than once, changing each occurrence's transpose value would use no additional memory, but transposing the tracks would. The Transpose Value indicates what middle C is transposed to—if it displays C3, the sequence is not transposed. If it displays D3, the sequence would play a whole-step higher. (If your Preference setting for middle C is C4, C4 would mean "no transposition," and D4 would indicate a transposition of "up a whole-step.")

Playing Subsequences Simultaneously

There are a few ways to make sequences play simultaneously.

Perhaps the most simple way is to put them on different tracks. This is easy to view in Track Overview:

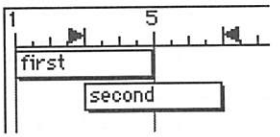


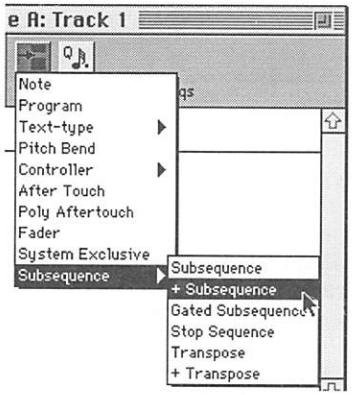
Figure 8.11: These subsequences will play at the same time.

Another way is to have them on different Players. Set the Player numbers for the two subsequences in the List window to different numbers and they'll play simultaneously (if you record the subsequence event, this number is set to the current Player in the Players & Queue window; otherwise it is set to Player 1).

Simultaneous Subsequences in the Same Track

If you don't want to use the Players, and you want to create subsequences in the same track that always play together, you can use a Plus subsequence type (see page 123). To create two subsequences that play together, follow this basic procedure.

1. **In a List window, choose Plus Subsequence from the Insert Event subsequence submenu twice.**



2. **Record or paste the sequences you want to hear simultaneously.**
3. **If you desire, change the start time of the subsequences.**

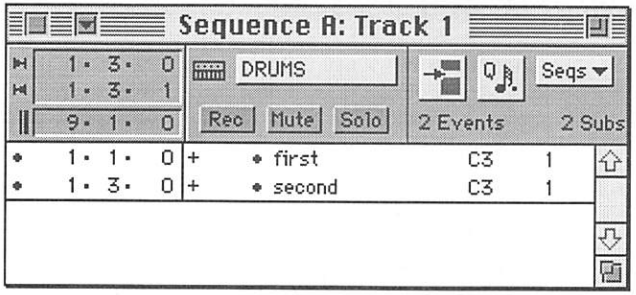


Figure 8.12: The second subsequence will start two bars after the first, and the first will continue to play

Inserting Subsequence Events in the List Window

You can insert subsequence events in a List window using the Insert Event pop-up. Whenever you do this, Vision creates a new, empty subsequence that is added to the track. You can either paste another sequence from somewhere else to this empty subsequence or you can open its Tracks window to record on it.

You must use the subsequence selector dot to select subsequences for copying and pasting them (see Figure 8.9 on page 120).

You can choose the type of subsequence event that you want to insert.

Subsequence Event Types

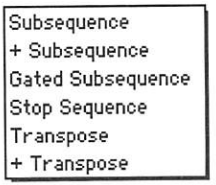


Figure 8.13: Subsequence Event submenu in the Insert Events pop-up

The Insert Event pop-up menu shows six types of subsequence events when you choose the subsequence category in the main part of the pop-up.

Subsequence

Subsequence is a basic subsequence event, and it stops all sequences playing on the current Player and plays the current sequence.

+ Subsequence

Plus subsequence is similar to a basic subsequence, except that it does not stop sequences already playing on the Player. When you record a performance in Trigger mode, the first key you play records a basic subsequence event. Each additional simultaneous key you play records a plus subsequence event.

This way, if you play a chord, three copies of the sequence will play simultaneously. When you release it and play a new note, the three copies will stop, and a new one will begin. When you record a performance in Continuous Trigger mode, each key you play will record a plus subsequence event.

If you would like a track to have two subsequences playing simultaneously, there are two ways to do it. One way is to have the subsequences play on different Players. The other way is to use a plus subsequence event for the second subsequence.

Gated Subsequence

A gated subsequence event is displayed in the List window with a ± sign. It is like a plus subsequence, but it has a duration. It starts the current sequence playing on the current Player, transposed as indicated, and stops it after the duration indicates. Every note you play in Gated mode will record one gated subsequence event.

Stop Subsequence

A stop subsequence event is recorded by Vision if you press the period key (.) while playing. It stops all sequences playing on the indicated Player, and doesn't start any new ones. You may find this useful for stopping a single subsequence of some fixed length in a variety of places.

Transpose

This inserts a transpose event *not* a subsequence event. It transposes all of the Track's subsequences regardless of which Player they use. This event *cancels* any previous transposition value and sets a new one.

+ Transpose

This inserts a transpose event not a subsequence event. It transposes all of the Track's subsequences regardless of which Player they use. This event *adds* to the previous transposition value.

CHAPTER 9: Customizing Vision

About Vision Files

Vision stores different types of information as a separate file "objects" within a native-format Vision file. Each Vision file can contain many objects, including:

- Sequences
  This includes all of the sequences in the Sequences window and all subsequences.
- Instruments
  This includes the information in the Instruments window.
- Input Map
  This is the information displayed in the Input Map window.
- MIDIKeys
  This includes information displayed in the MIDIKeys window.
- Fader Assignments
  This includes the fader assignments as displayed in the Faders window.
- Fader Values
  This includes the fader values as displayed in the Faders window.
- Transpose Maps
  This information is displayed in the Key Transpose dialog.

When you save a Vision file, you can choose which of these objects you wish to save with it (see page 300). Most of the time, you will save Sequences and Instruments. However, you *can* save Vision files that don't contain Sequences or Instruments at all.

When you open such a file, you current sequences will not be disturbed, but any new maps or assignments contained in the file you're opening will replace the file you're working on. This way you can save a set of fader values in a file by itself, then instantly replace the fader values in another Vision project.

There are many different types of Vision files, and some of these files contain objects. Here is a list of Vision file types, with the file objects that can be stored with each file:

- Sequence Files

  These files contain sequences, including all Edit window information (including locations), instruments, and a reference to a name file. They can also include MIDIKeys, Fader, and Input Map settings.
- Vision Setup

  This is a special file that can include Instruments, MIDIKeys, Fader Assignments, Fader Values, and Input Map settings, but doesn't include sequences. See the next section, "Vision Setup" on page 127, for more information on this file.
- Stationary Files

  These are Vision sequence files that use System 7's stationary feature. Use stationary files to create sequence "templates" that can serve as a common starting point for compositions.
- Name Files

  These files include everything in the Names window (subscriptions to bundles, device/name list settings, etc.) and all names in name lists. Each Sequence file has an associated Name file, and Sequence files can share Name files.
- Vision Preferences

  A lot of information is stored in the Vision Preferences file, which is stored in the Preferences folder in your system folder.
- Vision Grooves

  There is a special Vision sequence file that contains a list of the sources available for Groove Quantize. See "Creating Your Own Grooves" on page 129 for more information.
- OMS Studio Setup (an OMS file—not really a Vision file)

  This file contains important information about your studio, including Metronome and Thru device and channel, the receive sync device, send clock device, auto-remappings, and enabled input devices.

❑ Vision Setup

If you frequently use a particular set of file objects (such as Fader Assignments, or and Input Map) with each project, you can save the object configuration as a Vision Setup file. Whenever a new Vision file is created, it will use the configuration of file objects saved in the Vision Setup file.

If a composition requires special file objects, you can save those objects with that composition's Sequence file. Sequences cannot be saved in a Vision Setup file.

You can keep libraries of particular file objects. For example, you might use a number of different Transpose Maps. Rather than store all your Transpose Maps with each project, you could create a library of Transpose Maps in your Vision Setup file. In this case Vision will automatically save those Transpose Maps with any Instruments that use them.

Saving the Vision Setup File

Once you have defined the various aspects of your setup, you can save a Vision Setup file. Setups that you save in the Setup file will open when you start Vision and when you choose **New** from the **File** menu to create a new sequence file. To Save the current setups, choose **Save as Setup** from the **File** menu.

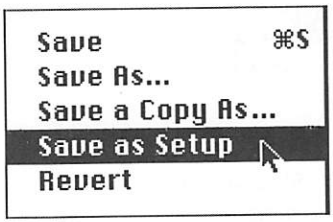


Figure 9.1: Choosing Save as Setup

Your Setup information will now be saved in the Setup file. This file is automatically placed in the same folder as the Vision application. It must remain in this folder in order for Vision to access it.

Saving Setup Information in a Sequence File

When you open a sequence file that has file objects saved with it, all saved setups will open unless you uncheck them in the What to Open dialog box. If they're unchecked, setups from the Setup file will open instead.

1. **Choose Save As from the File menu.**
2. **Type a name for your sequence file.**
3. **Click the What to Save button.**
4. **Check the setup information you wish to save with the current sequences.**
   Notice that sequences and instruments cannot be unchecked at this time.

If you have changed setup information but have not saved it in either a Setup file or Sequence file, you will be prompted to save them when you quit Vision.

Opening a Sequence File Using Your Setups

If you're working with a sequence file that was created in someone else's Vision environment, you may wish to use your own Vision Setup document. To accomplish this:

1. **Choose Open from the File menu.**

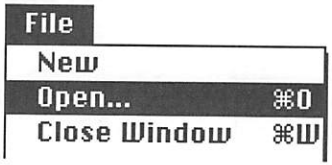


Figure 9.2:

2. **Locate and highlight the file you wish to open.**
3. **Click the What to Open button.**
4. **Uncheck all items except Sequences and Instruments**
5. **Open the file.**
   Your Setup File will replace the unchecked setups.
   You will still need to re-map devices which differ in the two setups (seepage 364).

❑ Default Settings

In the System Folder, there is a folder called Preferences Folder, which contains the preferences of many applications on your hard disk. There, you can find the file Vision Preferences, which stores many settings, such as the default window locations for each type of Edit window, Preferences dialog settings, and various other menu item settings.

If you want to launch Vision with its default settings, you can throw away this file, then launch Vision. You should realize that all of your preference settings will be lost when you do this.

❑ Creating Your Own Grooves

In Groove Quantize mode, Vision sets the alignment grid based on the source track you have selected in the Quantize window (see "Groove Quantize" on page 250). If you have performed a rhythm that you want to apply to other tracks, all you need to do is add this track to a sequence in the file "Vision Grooves," then use it as a source track in Groove Quantize.

1. **Record a groove you would like to use as a source.**
2. **In the Tracks window, select the track and choose Copy Track from the Edit menu.**
3. **Open the file "Vision Grooves."**
4. **Make the Sequences window active.**
5. **Make sure nothing is selected, then choose Paste Sequence.**
6. **Give the sequence an appropriate name.**

To add your groove track to an existing sequence:

1. **Open that sequence's Tracks window.**
2. **Select an empty track.**
3. **Choose Paste Track from the Edit menu.**

Now, when you want to apply this groove to another track, choose it as the Groove Source.

❑ Using Stationery Files

If your sequences generally have similar layouts, you can store Vision files as a stationery file, which will act as templates. The advantage of using stationery files is that in addition to containing all Instruments and other objects (like MIDIKeys), a stationery file can contain one or more sequences with instruments pre-assigned to tracks.

To make a stationery file:

1. **Create a normal Vision file that you want to use as a template.**
   If you commonly use the same instrument assignments, be sure to assign the instruments. Click the Track Name, then set the Instrument.

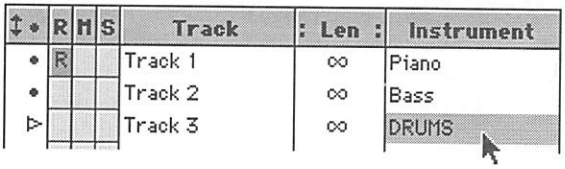


Figure 9.3: Creating a Tracks window template

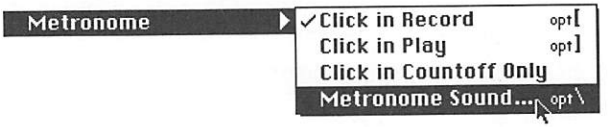
2. **Save the File normally.**
   For instructions on how to do this, see page 299.
3. **Go to the Finder.**
4. **Select the file.**
5. **Choose Get Info from the File menu.**
6. **Enable the Stationery Pad checkbox.**

When you want to use this template, open it as if it were a normal Vision file. Vision will open a copy of the stationery file in an untitled window.

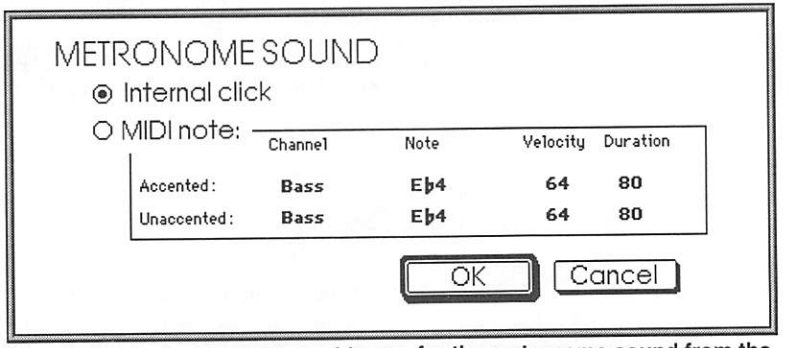
❑ Setting Your Own Metronome Sound

When you use a metronome, you have the choice of using a MIDI device, or the Macintosh speaker. If you know the sounds you wish to use for a metronome, it's easy to set this up:

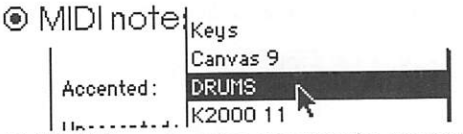
1. **Choose Metronome Sound from the Metronome submenu of the Options menu.**



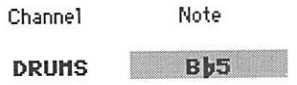
The Metronome Sound dialog will appear.



2. **Choose the Instrument you want to use for the metronome sound from the Instrument pop-up**



3. **Highlight the note value and play the metronome sound on your MIDI controller.**



4. **If you want a different sound for the first beat, you can set this here as well.**
5. **Click OK.**

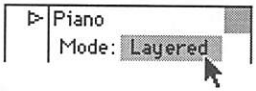
❑ Creating Custom Instruments

You can use the Instruments window to create all sorts of layers and splits—if you have multiple MIDI sound modules, you can create Vision instruments that are more versatile than the patches alone. For complete instructions on the Instruments window, check out *Chapter 18: The Instruments Window*. As an example of how you can create custom Instruments, follow these steps to create a split keyboard:

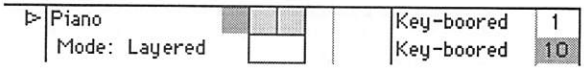
1. **Select an Instrument in the Instrument window.**

2. **Choose Add Line to Instrument from the Instrument menu pop-up.**

3. **Set the Mode to Layered.**



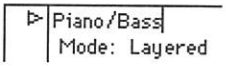
4. **Set the two instrument lines to different MIDI channels.**



5. **Set the range of both lines so that they cannot play the same notes.**

Key-boored	1	Off	100	0	0	E3	C6
Key-boored	10	Off	100	0	0	C1	C6

6. **If you want to, re-name the Instrument.**



CHAPTER 10: Using External Synchronization

There are two primary purposes for working with synchronization:

- matching the timing of external MIDI devices

  For example, you may want Vision to play in sync with another sequencer or drum machine.
- locking to tape

  You can put vocals, acoustic instruments and other tracks onto tape and have Vision play back "virtual tracks"—MIDI tracks which will play the synthesizers in time with the taped performances. When you set Vision to synchronize with the tape deck, all of your MIDI tracks can play simultaneously.

There are two MIDI synchronization protocols: the original MIDI sync, which synchronizes beats (it goes faster at faster tempos), and MIDI Time Code. MIDI Time Code is a MIDI representation of SMPTE Time Code and synchronizes time with no concept of beat or tempo.

You can also use Vision to control devices that support MIDI Machine Control (MMC). For more information on this feature, see *Appendix A: AV Controls for MIDI Machine Control* on page 387.

❑ Slaving to an External MIDI Device

MIDI sync provides stop, start and continue functions, a timing clock, and song pointer (which allows you to start playback in the middle of a sequence).

To slave Vision to an external MIDI sync device:

1. **Set the Master Sync mode to External.**

Figure 10.1: Setting the master Sync to External in the Control Bar

You can do this most easily by using the setting in the Control bar under the Master Tempo.

You can also choose **External Beat Clock** from the **Receive Sync Mode** submenu in the **Options** menu.

2. **Choose a device from Receive Sync Device submenu in the Options menu.**

Select which port you're using for synchronization.

3. **Make sure the sequence that you would like to be synchronized with the external device is selected as the active sequence.**
4. **Click Play (or press the Spacebar).**

The Play button will flash.

5. **Start the external device.**

When Vision receives the MIDI sync messages, it will locate the sequence to the requested location and begin playing.

❑ Synchronizing to External MIDI Time Code

In most situations that involve the use of tape decks, it will make more sense for the tape deck to be the master and Vision to be the slave—wherever the tape goes, Vision follows as accurately as possible. This process is also called "chasing."

Vision supports all SMPTE formats but you must tell it which one you are working with. To do this, simply choose **SMPTE Format** from the **Options** menu and choose the desired format from the submenu that appears.

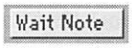
Synchronizing with SMPTE requires an external SMPTE to MIDI Time Code Converter (such as Opcode's Studio 3, Studio 4, Studio 5, or Time Code Machine). To slave Vision to MIDI Time Code:

1. **Set the Master Sync mode to Time Code.**
   You can do this most easily using the setting in the Control bar under the Master Tempo setting.
2. **Choose a device from Receive Sync Device submenu in the Options menu.**
   Select which port you're using for synchronization.
3. **Select which sequence you would like to play in sync with Time Code.**
   You should make sure your tape is striped with SMPTE and you should allow some leader time before the sequence is supposed to start.
4. **Click Play (or press the Spacebar).**
   The Play button will flash.
5. **Start the tape.**
   When Vision receives the time code, it will determine if the code is before or after the beginning of the sequence (as set in the Sequence window's Offset field). If it's before, the counter will display negative bar numbers, counting towards bar 1. If it's after the beginning of the sequence, Vision will locate the sequence to the correct location and begin playing.

NOTE: You can roll the tape even when Vision is stopped—Vision will display the timecode.

❑ Recording with External Synchronization

You can record into Vision while synchronized with an external source, using either MIDI Sync or MIDI Time Code. First, make sure the Punch points are enabled or that Vision is in Overdub mode. To begin a record pass, click **Record** (or type Tab). The Record button will flash.



Wait For Note

In Wait For Note mode, when you start the external device, Vision will begin playing the sequence and the Record button will not be highlighted. Vision will punch in whenever you play a note or press the Spacebar. The Record button will highlight. As usual, you may punch in and out as much as you like.

Auto Punch

A Countoff can't be guaranteed because Vision cannot control the sequence starting point, so Countoff automatically becomes Auto Punch when you select an external sync mode. In Auto Punch mode, the Record button will not be highlighted if you start before the Punch In point (or after the Punch Out point). Vision will automatically punch in when you reach the Punch In point and it will automatically punch out when you reach the Punch Out point. If you start the sequence in-between the two points, Vision will be Punched In and the Record button will be highlighted.

When you are finished recording, press Return, click the Stop button or just stop the tape. Whenever Vision loses the sync signal, it stops the record pass and the Status shows Idle. If you have such a bad sync signal that your SMPTE/MIDI converter loses sync, you should not try to record, because recording will stop at the point where the signal becomes bad. Restripe your tape with a fresh SMPTE signal.

The number of bars of Countoff you've set in Internal mode will control the metronome: if you've set a 2 bar Countoff and you start the tape 5 bars before the In Point, you won't hear the metronome until 2 bars before the In Point.

❑ Automatically Changing Sync Modes

If you are using external sync, Vision will automatically (and temporarily) enter **Internal** mode when you perform the following actions:

- Start a sequence by typing a Macintosh key
- Choosing **Play Selection** from the **Do** menu
- Set a specific Counter location when Vision is not already playing the active sequence in sync

When the sequence is finished, Vision will automatically return to External sync. This is because you indicated a particular starting point, but External sync attempts to start them at the external device's location

❑ SMPTE Time Code Rates

Vision supports five SMPTE frame rates:

- 24 Frame

  This is the rate used by feature films.
- 25 Frame

  This rate is used by EBU (European) television.
- 29.97 Drop Frame

  This rate is used by NTSC (American) color television
- 29.97 Non-Drop Frame

  This is used to sync to NTSC color television without dropping frames. SMPTE time does not match real time, but playback pitch is unaffected. Video decks run at 29.97 frames per second.
- 30 Non-Drop Frame

  This was the original NTSC black and white television standard. This is often used in audio-only situations since there are no dropped frames and the SMPTE time is equal to a real clock.

The difference between 29.97 Non-Drop and 30 Non-Drop

These are actually the same format, just being played at different speeds. Vision can't tell the difference between something which you intend to be 29.97 non-drop on a video machine, and something which you intend to be 30 non-drop on a slightly slow audio machine.

If you specify 29.97 non-drop, Vision will skew the tempos of everything so that if your tape goes at exactly 29.97 frames per second (as all video decks do), and you have a tempo of 120, Vision will play 1200 beats along with 10 minutes on your watch, which will be ahead of the SMPTE time.

If you specify 30 non-drop, and your deck goes at 30 frames per second, and you have a tempo of 120, Vision will play 1200 beats along with 10 minutes of SMPTE time, which will match your watch.

If you specify 30 non-drop, but your deck goes at 29.97 frames per second, and you have a tempo of 120, Vision will play 1200 beats along with 10 minutes of SMPTE time, which will still be behind your watch.

❑ Synchronizing External Devices to Vision

Vision can send sync signals that you can use to slave an external device using Vision as the master. To send sync to an external device:

1. **Type Command-dash (-) or choose Send Sync Enabled from the Send Sync submenu of the Options menu.**
2. **Choose the type of Sync you want to send.**
3. **Choose the device you want to send sync to.**
4. **Set up the receiving device to receive sync.**

This menu is described in detail in "Send Sync" on page 371.

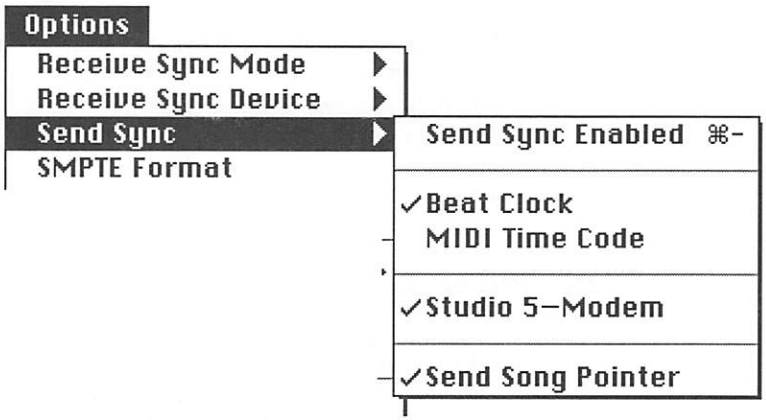


Figure 10.2: Send Sync Submenu

PART 2: Vision Windows

CHAPTER 11: The Control Bar

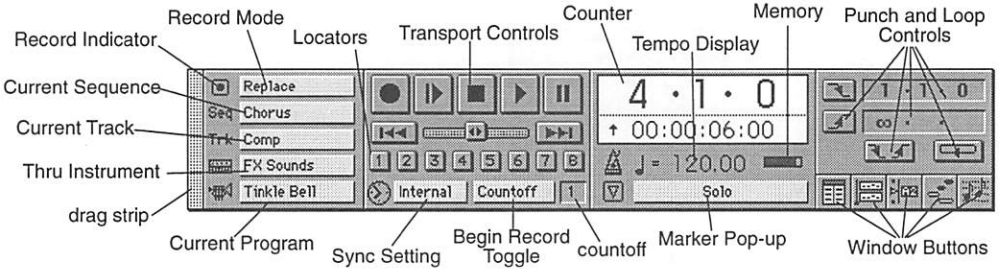
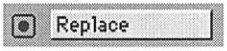


Figure 11.1: The Control Bar

The Control Bar contains the major controls for Vision. It's normally located just below the Macintosh menu bar, but it can be moved either by dragging the drag strip (at the left edge), or by option-dragging any vacant area in the Control Bar itself.

The Control Bar cannot be closed.

Record Mode



The Record Mode determines how Vision will record your tracks. There are four different record modes, which you can select from the Record Mode pop-up:

- **Replace** will erase the existing track data while you record in real-time.
- **Overdub** will keep the existing track data—during real-time recording, you add your performance to the MIDI data already in the track.
- **Step Replace** will erase the existing track data while you step record.

  Step recording is a process where you record MIDI events individually. For more information, see "Step Recording Basics" on page 32.
- **Step Overdub** will keep the existing track data while you step record.

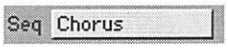
To change the current record mode, choose the desired Record Mode from the Record Mode pop-up.

Figure 11.2: Record Mode pop-up

Record Indicator

The record indicator ([●]) is next to the record mode. The record indicator will blink when Vision is recording MIDI events.

Current Sequence



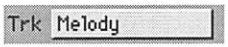
The Current Sequence is the sequence on which recording will take place. Whenever you bring a different sequence's Tracks window to the front, the Current Sequence pop-up will change to show the current sequence name (except if you're actively recording in another sequence).

When you choose a Sequence from this pop-up menu, its corresponding Tracks window becomes active.

Figure 11.3: Choosing a Sequence from the Current Sequence pop-up

Double-click on the word "Seq" to bring the current Sequence's Tracks window to the front.

Current Track



When you enable recording on a track, the pop-up will display the track name in the Current Track pop-up. Also, you can enable recording on a track by choosing a track from the pop-up.

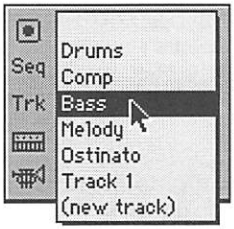


Figure 11.4: The Current Track pop-up

You can also add a new track to record on by choosing **(new track).**

To open the Graphic window for the current track, double-click on the word "Trk" (A List window will open if the track is empty). To open the List window for the current track, option-double-click the word "Trk".

❑ Thru Instrument

The Thru Instrument pop-up displays the instrument that your MIDI keyboard is assigned to and is the instrument that recorded MIDI data will use. This instrument will sound when you play your MIDI keyboard (if **Keyboard Thru** is enabled in the **Options** menu). When you record-enable a different track by clicking in the Tracks window's Record column, this display automatically updates to the instrument used by that track.

You can also choose an instrument from the Thru Instrument pop-up:

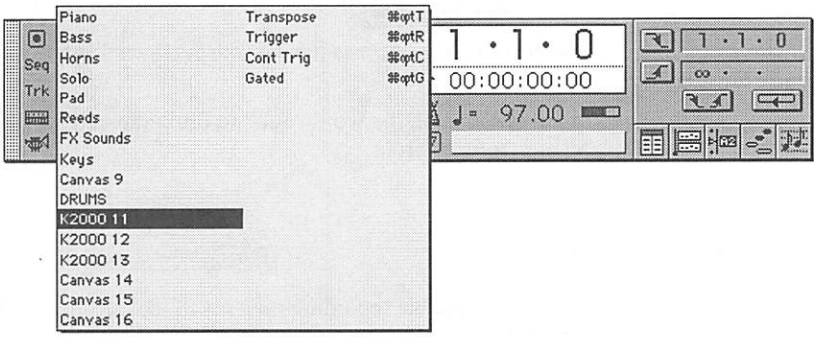


Figure 11.5: The Thru Instrument Pop-up

Double-click on the Instruments icon (⌨) to open the Instruments window. For more information on the Instruments window, adding or subtracting instruments, or re-arranging the order of the instruments, see *Chapter 18: The Instruments Window* on page 233.

Key Equivalents: You can use the Macintosh keyboard to set the Thru Instrument. If you hold down the option key while you click the Thru Instrument pop-up, you will see the list of key equivalents. Also, you can use the asterisk (*) on the numeric keypad to set the Thru Instrument. See "Changing the Thru Instrument Using Command-Keys" on page 25 for instructions on using the Macintosh keypad.

Trigger and Transpose Items

There are four items on the right side of the Thru Instrument pop-up that are not MIDI instruments. These are real-time performance modes. They work independently of similar items in the Input Map window, which are described in greater detail in "Trigger and Transpose Modes" on page 261.

- Transpose

  Choosing this menu item will temporarily set Vision in transpose mode, which will automatically transpose the current playing sequence when you play a note on your MIDI keyboard.

- Trigger

  In trigger mode, every note you play will restart the playing sequence. Playing sequences will stop when you strike a new key. You can play more than one note in this mode to produce automatic harmonies.

  If the Thru Instrument pop-up in the Control Bar is set to Trigger, typing a sequence letter will temporarily no longer play the sequence. It will make the sequence "Triggerable." Play any note on your MIDI controller to start all triggerable sequences simultaneously.

- Cont Trig

  In Continuous Trigger Mode, Sequences will not stop when you trigger a new sequence.

- Gated

  In Gated mode, each sequence will play for the length of time you hold down the key. When you lift your finger off the key, the sequence will stop.

❑ Current Program

The Current Program pop-up shows the program that is being used by the Thru Instrument. Choosing a new program from this popup will send a program change message to the Thru Instrument.

Vision remembers the last program change that was sent to each Instrument in the Thru Instrument pop-up. When a new Instrument is chosen from the Thru Instrument pop-up, the Current Program pop-up will change to display the program that was last sent to that Instrument. When you first launch Vision, this pop-up is blank because Vision has not yet sent a Program to the Instrument.

You can also use this field to enter Program Changes while you are recording.

This pop-up display is automatically updated when you send program changes on the Thru Instrument, either when editing or playing.

You can send program changes to the Thru Instrument by choosing items from this menu. Items may be numbers or names. If you have used the Names window to assign names to your programs (or you have subscribed to Galaxy bundles), you will see program names:

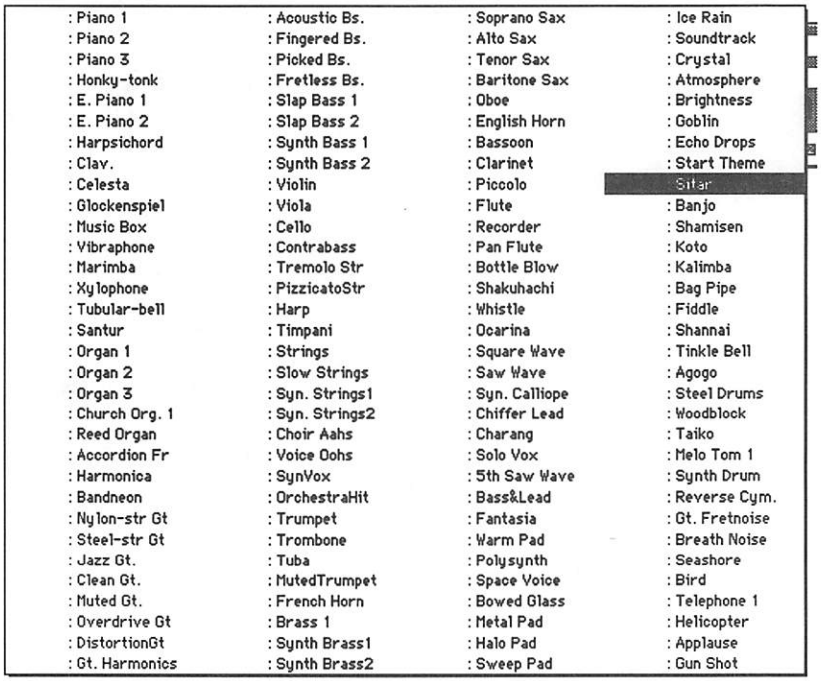


Figure 11.6: Current Program pop-up with Names

If you have not assigned names to your programs, you will see program numbers instead:

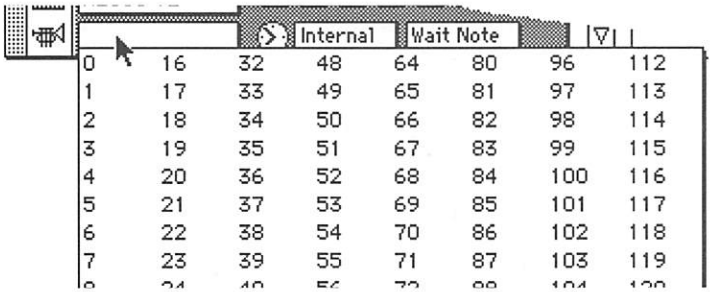


Figure 11.7: Current Program pop-up with Numbers

The program change will be sent when you release the mouse button. If you want to re-send the program change, highlight the pop-up and type **enter** on your Macintosh keyboard.

Using this pop-up will change the program of the Thru Instrument only. It will not add a program change event to your current track unless you are recording. For information on adding program change events, see "Inserting Events" on page 225 and "Copy Programs" on page 342).

To open the Program Names for the Thru Instrument, double-click on the Program Change icon ( ). This allows you to audition different programs by selecting them from the open Program Names window. For more information on using Name Lists, see "Name Lists" on page 255.

❑ Transport Controls

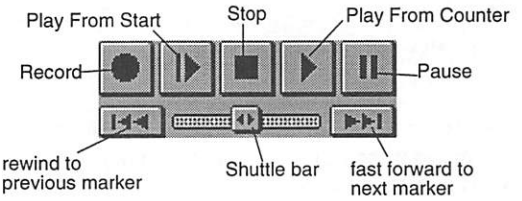


Figure 11.8: Transport Controls

The transport controls are in the middle of the control bar. They give you control over the playback and recording of your sequences. Unlike many Macintosh windows, the Control Bar is always active. Clicking it will *not* move it in front of another active window—this lets you access Control Bar functions without de-activating another window.

Record

Key Equivalent: Type the **TAB** key on the Macintosh keyboard to click the **Record** button.

Click the **Record** button to initiate recording. During playback or recording, you can click the record button to punch in or out at any time. If the button is highlighted (red on color monitors), you are recording. If the button is flashing, this means that recording will occur when the counter reaches the In Point. If the record button is disabled (grayed out), you cannot record—this probably means there is no track that is record enabled.

Play From Start

Key Equivalent: Type the **Spacebar** on the Macintosh keyboard to click the **Play from Start** button.

Click the **Play from Start** button to start playback from the beginning of a sequence, or from the In Point set in the punch area of the Control Bar. If the sequence is paused, clicking this button will continue playing the sequence from the pause point.

Stop

Key Equivalent: Type the **Return** key on the Macintosh keyboard to click the **Stop** button.

Click the **Stop** button to stop playback or recording.

Play From Counter

Key Equivalent: Type the **semicolon key (;)** on the Macintosh keyboard to click the **Continue** button.

Click the Play From Counter button to start playback of the current sequence from the current counter location. If the sequence is paused, clicking this button will continue playing the sequence from the pause point.

Pause

Key Equivalent: Type the **Spacebar** or **semicolon key (;)** on the Macintosh keyboard to click the **Pause** button while you are playing and recording.

Click Pause to pause recording or playback. This button will highlight while you are paused.

Shuttle Bar

Key Equivalent: Type the **comma (,)** to move the shuttle bar button left. Type the **period (.)** to move it right.

The shuttle bar will move the counter at variable speeds. If you move the shuttle bar to the left, the counter will move in reverse. If you move the shuttle bar to the right the counter will move forward. The further you move from the center, the faster the counter will move.

The shuttle bar can be used both during playback and while a sequence is stopped to listen for a specific spot in the sequence. You can also click anywhere on the bar itself and the button will jump to your mouse location.

If the sequence is stopped and an Edit window is active, you will hear the music in the window play back when you move the shuttle bar (this is similar to "scrubbing"—see page 12).

Previous and Next Marker Buttons

Key Equivalent: Press the < **(shift-comma)** and > **key (shift-period)** on the Macintosh keyboard to click the **Previous** and **Next** buttons.

These buttons step through the items in the Markers pop-up, which also include the Punch Points and the beginning and end of the sequence. For more information, see "Markers" on page 189).

Locators 1 2 3 4 5 6 7 8

The locator buttons store counter locations in memory. After you set a locator, clicking it will cause the counter to jump to a specific location. Each Sequence stores its own eight locator settings.

Key Equivalents: You can type the corresponding number of the Locator to select it. You can option-type a number to set a locator, and you can option-shift-type a number to clear it.

Setting a Locator

Undefined locator buttons are grayed out. You can set locators to the current counter location while the counter is moving, or while it is stopped. To set a locator:

1. **Set the counter to the location you wish to set.**

   You don't need to know the exact location. You can listen for the desired location if you prefer, and add locators "on-the-fly." You can perform this during recording or playback.

2. **Option-click the locator button you wish to set.**

   You can also hold down the option key on your Macintosh keyboard and type a number between 1 and 8.

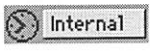
   If the locator button is gray (undefined), you can set it by clicking it directly (without holding down the option key).

When you click this locator, the counter will jump to the location you just set.

Clearing a Locator

To clear a locator button:

1. **Option-Shift-click the button you wish to clear.**
   The button will turn gray, showing that it is empty.
   You can also hold down the option and shift keys on your Macintosh keyboard and type a number between 1 and 8.

❑ Sync Setting 

Key Equivalent: Type the tilde key (~) on the Macintosh keyboard to toggle between either **Internal** mode or **External, Timecode** or **MMC** modes (whichever you most recently used).

The Sync Setting pop-up displays the current source of Vision's sync. You can change the sync setting by choosing an item from this menu:

Figure 11.9: Sync Setting pop-up

The types of sync settings are:

- Internal
  In this, the default setting, Vision uses the internal clock of the Macintosh.
- External
  Vision timing and master tempo is controlled by an external MIDI Sync device. Through MIDI Song Pointer messages, Vision will chase the master source and sync to an external device.
- Timecode
  In this mode, Vision compares the received SMPTE time to the active sequence's SMPTE offset and computes the correct place to begin.
- MMC (MIDI Machine Control)
  If you have the AV OMS driver in your OMS folder, you will also have "MMC" as an available sync setting. For more information, see *Chapter A: AV Controls for MIDI Machine Control.*

In both External and Timecode modes, some device other than your comupter controls the Counter and the tempo. When you start recording or playing in one of these modes, Vision will wait to start the counter until it receives external sync.

For more information on using the Sync setting, see *Chapter 10: Using External Synchronization.*

❑ Begin Record Toggle

The Begin Record toggle shows the way Vision will respond when you click the Record button. There are two possible settings:

Wait for Note

In this mode, after you click the Record button, Vision will pause the counter until it receives a note. (The metronome will start when you click record so you can get the tempo in your head.)

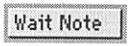


Figure 11.10: Begin Record in Wait for Note mode

Countoff

In this mode, Vision will start the metronome and counter and run for the specified number of bars before it begins recording.

Figure 11.11: Begin Record in Countoff mode

In countoff mode, you can change the number of bars in the countoff field by using the mouse or Macintosh keyboard.

Figure 11.12: Editing the Countoff

If you are punch recording, the counter will start playback this number of bars before the Punch In Point.

❑ The Counter

The counter displays the current location of the current sequence. There are two ways it displays this information:

- Bars • Beats • Units
- SMPTE (Hours:Minutes:Seconds:Frames)

The Bars • Beats • Units is in the large display by default. The SMPTE time is in the small display:

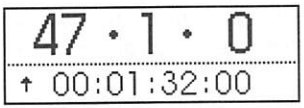


Figure 11.13: The Counter

You can switch the positions of the two displays (making SMPTE the large display) by clicking the Counter Display toggle (↑). Click it again to return the display to its default.

Figure 11.14: Switching between the Counter Displays

The counter is automatically updated when the location of the sequence changes in any window. You can change a counter value by selecting it and typing a number or dragging it with the mouse. For more keyboard shortcuts on setting the counter, see "Setting the Counter" on page 25.

About Units

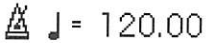
Vision uses a 480 pulse-per-quarter note (ppq) resolution. This means that there are 480 units in each quarter note, and there are 480 possible locations within each quarter note for a MIDI event to occur.

About Frames and Bits

Frames and bits are part of the SMPTE time code specification. The number of frames in one second depends on the type of time code you are using—see "SMPTE Format" on page 372 for a description of time code types. There are 80 bits in a frame. Bits are shown in a sequence's SMPTE offset and in Edit windows.

Vision rounds each SMPTE location to the nearest 480th of a beat. When you type a SMPTE number (for an event start, for example) you may see that Vision rounds the number you entered to the nearest Bar • Beat • Unit amount which may slightly alter the SMPTE location you entered.

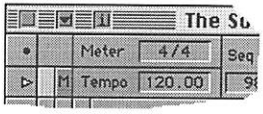
Tempo Display



The Tempo Display usually shows the tempo of the current sequence. It is updated automatically as the tempo changes, or if you are using MIDI sync (where Vision needs to calculate the tempo of the signal it receives).

Normally, you cannot change this tempo—it is updated automatically according to the current Sequence tempo track. However, you can bypass this and edit the tempo directly from the tempo display:

1. **Open the Tracks window of the current sequence.**
2. **Click the mute column in the Tempo Track.**



The Control Bar's Tempo Display is now editable.

3. **Use the mouse and Macintosh keyboard to set the desired tempo.**

This is not the usual way to change the tempo—an unmuted Sequence tempo will always change the tempo in the tempo display. If you want to change the tempo of a sequence, you should do it in the Tracks window, or in the tempo track of the sequence (see "The Tempo Track" on page 190).

If you change the tempo in the tempo display while you are recording, the tempo change will be recorded in the tempo track of the sequence.

To open a List window for the current sequence tempo track, double-click the Metronome icon ( ).

❑ Memory Display

You can see the amount of memory that Vision has available by looking at the memory display:

Figure 11.15: The Memory Display shows the amount of memory Vision has left.

For a more detailed look, click and hold down the mouse button over the memory display.

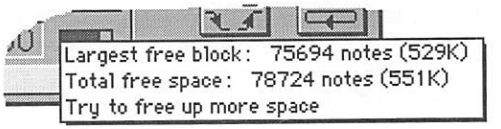


Figure 11.16: Memory Pop-up

The largest free block shows the largest contiguous amount of memory. If the total free space is substantially larger than the largest free block, you may have fragmented memory. You can try to correct this:

1. **Choose Try to free up more space from the Memory pop-up.**
   Vision will attempt to defragment your RAM.

If this procedure doesn't work, try quitting Vision and re-launching.

❑ Marker Pop-up

The Marker Pop-up allows you move the Counter to specific locations in a Sequence, and displays any markers you have added in the current sequence meter window.

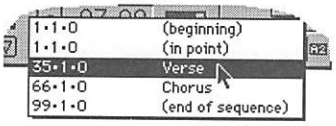


Figure 11.17: The Marker Pop-up

Before you have created any markers, the Marker pop-up will appear as a white rectangle and will only allow you to choose the **beginning**, **in point**, and **end of sequence.** These items, indicated by parenthesis, are not user-defined and will not appear in the Marker Display. The **in point** and **end of sequence** numbers include the last bar in the range—a 32 bar sequence, therefore, has a sequence end at 33•1•0.

Vision will add any user-defined markers to the Markers pop-up. User-defined markers appear without parenthesis. Vision shows the user-defined marker in the Marker Display whenever the Counter reaches the marker's start time.

To open a List window for the current sequence meter track, double-click the Marker icon ([▽]). To add new markers, choose either **Insert Bar Marker** or **Insert SMPTE Marker** from the **Do** menu (see page 348), or use the Insert pop-up in a List window to insert a marker (see page 230).

Punch and Loop Controls

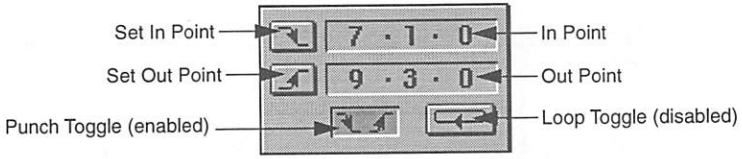


Figure 11.18: The Punch Controls in the Control Bar

Use these controls to set a range where Vision will:

- automatically start recording or playing
- automatically stop recording or playing
- repeat a specific time range indefinitely (during playing and recording)

Punch Toggle

Key Equivalent: Type the **Shift-6** on the Macintosh keyboard to click the Punch toggle.

Click the Punch toggle to enable or disable punch mode. When punch is enabled:

- The **Play From Start** button will start at the In Point.
- Recording will only occur within the range specified by the In and Out Points—Vision will disable recording until the counter reaches the In Point, and after the counter reaches the Out Point.
- If the **Stop at Punch Out** item is checked in the **Options** menu, Vision will automatically stop the counter at the Out Point.

When punch is disabled:

- Play From Start and Recording will always start at the beginning of the track.
- If you are using one of the replace record modes, the entire track will be replaced during recording, regardless of how much recording you did.

You can punch in and out of record mode manually by clicking the Record button (page 148). For instructions on punch recording, see "Punch Recording" on page 40.

Loop Toggle

Key Equivalent: Type the **Shift-7** on the Macintosh keyboard to click the Loop toggle.

Click the Loop Toggle to enable or disable loop mode. When looping is enabled, Vision will continuously repeat the portion of the sequence determined by the In and Out Points during playback and recording.

During Playback, loop mode allows you to take full advantage of the real-time editing capabilities Vision offers—you can listen to specific sections of a track, perform edits, then immediately listen to the results without restarting the sequence.

During overdub recording, you can use looping to build track data. This allows you to experiment with drum patterns, repeating musical patterns, and multitimbral tracks. There are some features specific to recording with looping enabled:

- You can type Enter on your Macintosh keyboard when you are satisfied with a recording—Vision will continue looping.
- If you make a mistake, you can type the delete key on your Macintosh keyboard. It will erase anything you recorded since the last time you hit enter.
- You can change record tracks just by record-enabling a new track.

Key Equivalent: You can enable recording on the track below by typing **command-down arrow.** You can record enable the track above the current track by typing **command-up arrow.**

For more information on loop recording, see "Loop Recording" on page 37.

Set Point Buttons

Key Equivalent: Type the [on the Macintosh keyboard to click the Set Punch In button ( ). Type the] on the Macintosh keyboard to click the Set Punch Out button ( ).

Use these buttons to set the Punch points to the Edit points or current counter location. If Vision is playing, these buttons will set the Punch Points to the counter. If Vision is stopped, these buttons will set the Punch Points to the Edit In and Edit Out points, respectively.

In Point and Out Point Fields

Key Equivalent: You can set the In Point and Out Points quickly by typing **"="**, then typing **"/"** on your Macintosh numeric keypad. For instructions on this, see "Setting the Punch Points to the Current Selection" on page 26.

The In Point and Out Point determine the range that will play or record when the Punch Toggle is enabled. They will always display the time range in Bars • Beats • Units. Set the range to encompass all the bars you want to loop or punch—if you want an 8 bar loop starting at bar 9, set the Out Point to bar 17.

If you disable both Punch and Loop, these fields will be gray—they do not mean anything unless you are punching or looping.

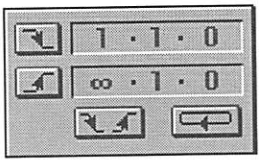


Figure 11.19: The In Point and Out Point fields are disabled when you are not punching or looping.

❑ Window Buttons

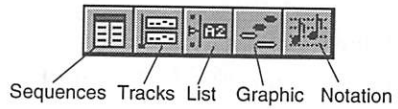


Figure 11.20: Control Bar Window buttons

Click one of these buttons to open a Sequences, Tracks, List, Graphic, or Notation window, if appropriate. Clicking one of these buttons is the same as choosing the corresponding command from the **Windows** menu.

CHAPTER 12: The Sequences Window

Sequences are groups of recorded tracks containing notes and other MIDI information. The Sequences window displays all the sequences in the current file.

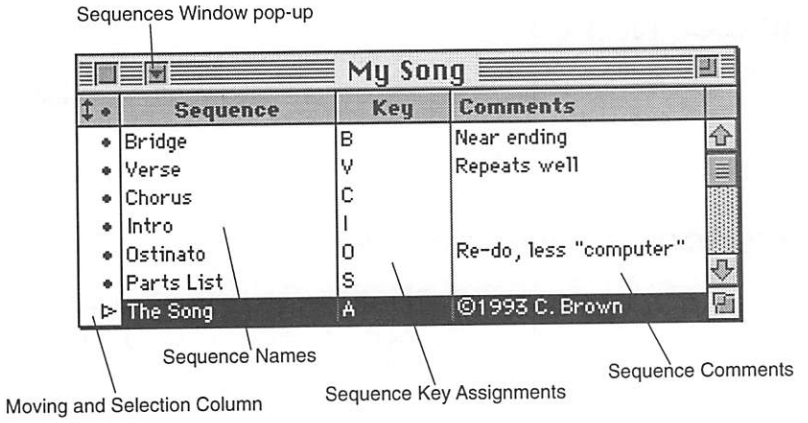


Figure 12.1: Sequences Window

❑ Moving and Selecting Sequences

To select a sequence, click on the selector dot in the left column of the window. A selected dot will change into a triangle, and the sequence will highlight.

You can select multiple sequences by either dragging or holding down the command or shift key on your Macintosh keyboard while you click selector dots.

To de-select a sequence, either click a different selector dot or hold down the Command or Shift key on your Macintosh and click the selected triangle.

To the left of the selector dots is the Move Column. When the cursor changes into a ↕, you can change the position of the sequence in the window.

For more information (and illustrations) about moving and selecting sequences, see page 6 and page 7.

❑ Sequence Names

To enter or change the name of a sequence, highlight this field and type whatever you wish. Type **Enter** or click anywhere else on the screen to enter the new name.

❑ Sequence Key Assignments

Highlight this field, then type a key combination on your Macintosh keyboard to assign a playback key for the sequence. You can use this key combination to trigger the sequence or record it as a subsequence.

❑ Sequence Comments

You can type any text into this area. Use it to make notes about the sequences.

Sequences Window Menu

You can choose a command from the Sequences Window pop-up. This menu is also available in the **Do** menu.

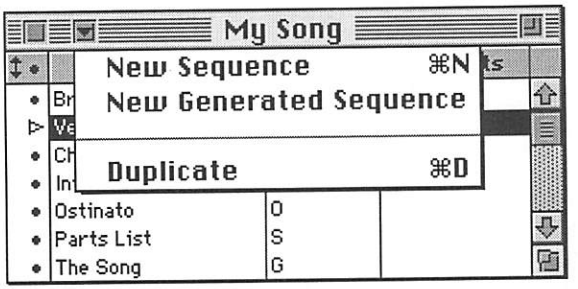


Figure 12.2: Sequences Window menu

New Sequence

This command creates a new sequence and opens its Tracks window. A Tracks window shows an overview of the tracks that make up a sequence.

New Generated Sequence

This command creates a new generated sequence and opens its Tracks window. Generated Sequences are used to play notes and chords using different rhythms, durations, or order than you originally recorded.

For more information on Generated Sequences, see "Generated Sequences" on page 196.

Duplicate

This will make a copy of all the selected sequences and place the copies at the end of the list of sequences.

CHAPTER 13: Edit Window Common Features

In Vision, there are four types of edit windows.

- Tracks Window
- Graphic Window
- List Window
- Notation Window

This chapter is an overview of the features in most of these windows.

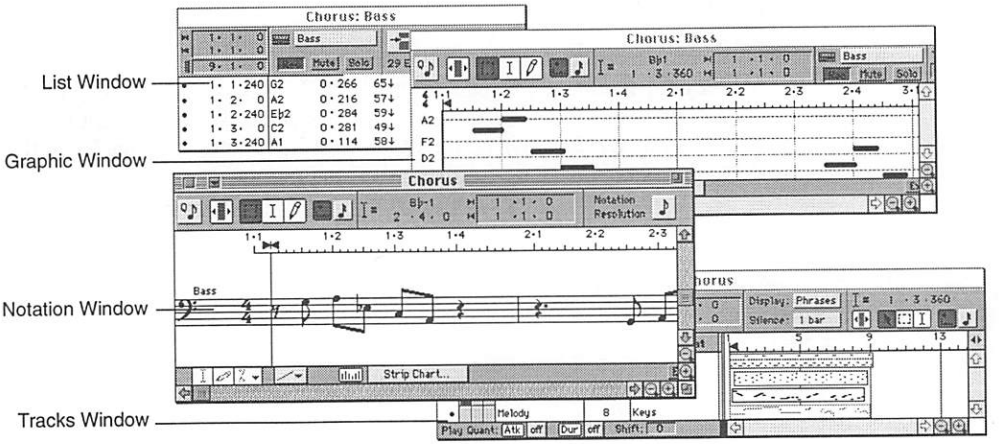
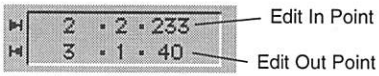


Figure 13.1: The Four Edit Windows

❑ Edit Points—Defining the Current Selection



The current selection defines the range of time that will be affected when you perform an edit operation.

Vision shows the current time selection in the Edit Points of all Edit windows. Vision will update the Edit Points in all open windows whenever the edit points change.

Automatically Setting the Edit Points

Whenever you make a selection, Vision will automatically set the Edit Points to reflect the selection you just made. This includes dragging a selection rectangle with the marquee tool, clicking notes individually, or dragging in the ruler.

Manually Setting the Edit Points

You can directly enter an Edit Point by clicking it and typing a new value or using the mouse. When you set the edit points manually, the edit indicators in the ruler are automatically updated, and MIDI events are either selected or deselected.

Key Equivalent: You can highlight the Edit In point by typing the "/" key on your Macintosh keypad. This way, you can set the Edit Points very quickly. See "Using the Macintosh Keyboard" on page 22 or the Quick Reference card for more information.

Other Ways of Setting the Edit Points

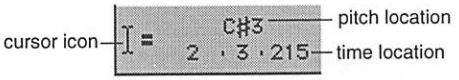
There are many commands and procedures to help you define the current selection. For more information, see the following areas:

- "Selecting Items with Selector Dots" on page 6.
- "Selecting Notes in a Graphic Window" on page 207.
- "Selecting Notes in the Notation Window" on page 212.
- "Using the Arrow Tool in Track Overview" on page 193.
- "The Select Submenu" on page 350.

After you have defined the current selection there are many operations you can perform. For more information, see the rest of this chapter and the following areas:

- "Modifying Notes in a Graphic Window" on page 209.
- "Modifying Notes in the Notation Window" on page 216.
- "Dragging Blocks in Track Overview" on page 195.
- *Chapter 27: The Edit Menu* starting on page 309.
- *Chapter 28: The Do Menu* starting on page 327.

❑ Cursor Display



This display is part of the Track Overview, Graphic, and Notation windows. When you position the cursor in the display area of the active edit window, Vision will continuously update the cursor display.

Use this information for precise placement when you are dragging notes or track overview blocks.

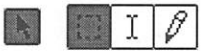
The cursor position will be displayed in either Bar•Beats•Units or SMPTE depending on the format chosen from the Edit Window Pop-Up (see page 176).

You can display *both* Bars•Beats•Units *and* SMPTE time code by clicking the cursor icon to the left of the display.

Figure 13.2: Click the cursor icon to toggle between displays

The Track Overview cursor display does not contain pitch information, because you cannot edit pitch values directly from the Tracks window.

Editing Tools



Arrow Tool

This tool is only available in Track Overview. Use it to select and drag track blocks in the Track Overview area. For more information, see "Using the Arrow Tool in Track Overview" on page 193.

Marquee Tool

This tool is available in Track Overview, Graphic and Notation windows. Use this tool to select a range of pitches and times (or portions of one or more tracks in Track Overview). You can shift-drag to extend the selection, or command-shift-drag to add a non-contiguous selection.

For information on using this tool:

- in Track Overview, see page 194.
- in Graphic windows, see page 207.
- in Notation windows, see page 213.

I-Beam Tool

This tool is available in Track Overview, Graphic and Notation windows. Using this tool allows you to select a time range by dragging—you will select all ranges of notes in the current track or sequence. You can shift-drag to extend the selection, or command-shift drag to add a non-contiguous selection.

For information on using this tool:

- in Track Overview, see page 194.
- in Graphic windows, see page 207.
- in Notation windows, see page 214.

Pencil Tool

This tool is available in Graphic and Notation windows. Use this tool to insert individual notes in your track. For more information on the Pencil tool and inserting notes, see "Inserting Notes" on page 34.

Track Functions and Instrument Pop-up

Figure 13.3: Track and Instrument Functions in Graphic and List windows

In Graphic and List windows, you can enable the recording, muting, or soloing of the track being displayed by clicking one of these buttons. This is the same as performing one of these functions in the Tracks window—see "Track Functions" on page 182.

You can also set the instrument of the track by choosing a new item from the Instrument pop-up.

If the track contains multi instruments, you can choose which instrument you wish to view, or choose **View** to open the View dialog (see page 173).

Double-click the keyboard icon (⌨) to open the Instruments window.

❑ The Ruler

The ruler is part of the Track Overview, Graphic, and Notation windows. Use this area to select a time period of the current track(s) or sequence. When you select a range of time in the ruler, all MIDI events are selected (not just notes).

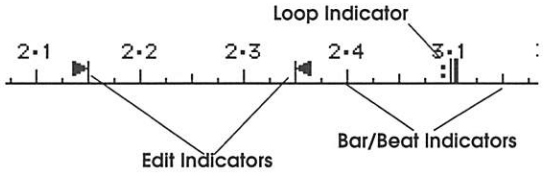
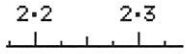


Figure 13.4: Indicators in the Ruler

Bar/Beat Indicators



The ruler shows the time scale in bars, beats, and divisions of beats. If there is room, Vision will display the bar and beat in the ruler above each line.

Edit Indicators

The edit indicators show the Edit In point and Edit Out Point of the current selection. Vision will update these indicators as the selection changes.

Loop Indicators

These are shown in the Notation and Graphic ruler if the current track is looped. The loop indicators show the points where the track repeats.

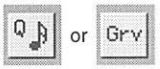
Markers

Markers are displayed in the Track Overview ruler at the point where they occur.

For more information on using the ruler in different types of windows:

- in Track Overview, see page 194.
- in Graphic Windows, see page 209.
- in Notation Windows, see page 215.
- for using the ruler to zoom, see page 10.
- for using the ruler to scale time, see page 52.

❑ Edit Window Pop-ups and Buttons



Quantize Value Pop-up

The Quantize Value Pop-up is available in Graphic, Notation, and List windows. This pop-up determines the quantize value or source for most quantize operations. For more information on this pop-up, see "Setting the Edit Quantize Value" on page 84.

Cursor Quantize

The cursor quantize controls are available in the Tracks, Graphic, and Notation windows. Using cursor quantize limits the cursor movements to specific time intervals. See "Using Cursor Quantize" on page 89 for more information.

Fit Selection to Window and Zoom Buttons

These buttons are available in the Tracks, Graphic, and Notation windows, and provide a way for you to view your MIDI data at different scales of measure in Notation, Graphic, and Track Overview windows. See "Zooming" on page 8.

❑ The Edit Window Pop-up Menu

All four Edit windows share a common Edit window pop-up menu. Access this menu by clicking the Edit Window pop-up button in the tittle bar of each Edit window.

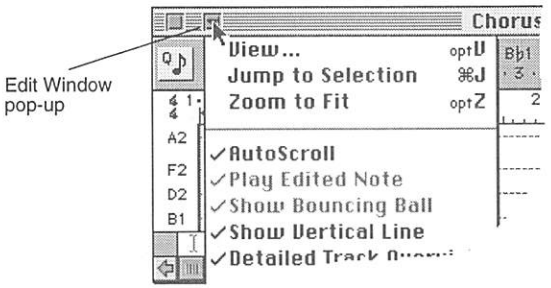


Figure 13.5: Edit Window Menu in the Tracks window.

You can also access this menu from the Window submenu in the **Do** menu:

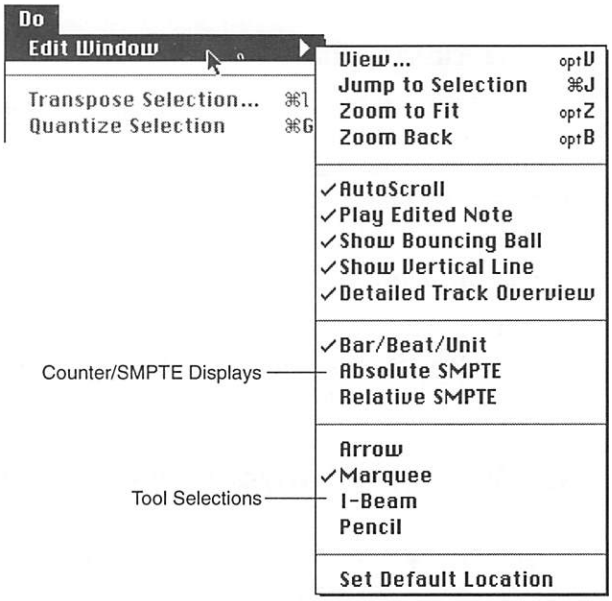


Figure 13.6: The Edit Window submenu

Each menu item works similarly in each edit window.

View (option-V)

Choosing this menu item will open the View dialog box. This window is especially useful when you are using a List window.

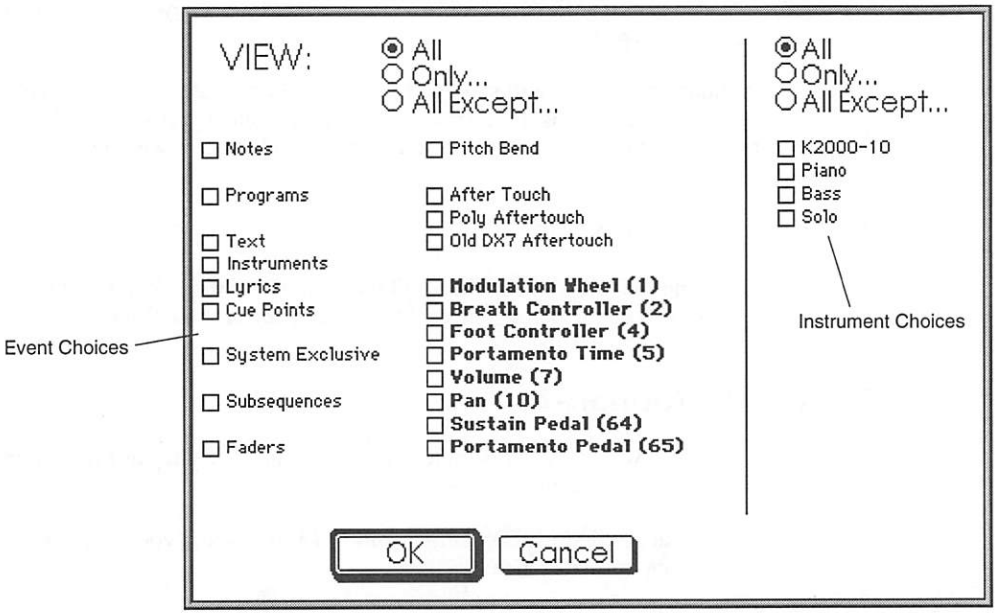


Figure 13.7: The View Dialog Box. This may look different, depending upon the type of track and window you are displaying.

In a List window, use this dialog box to control the types of MIDI events you wish to view.

If the track contains more than one instrument, you can also use this dialog box to choose the instrument(s) you wish to display.

For each type of criteria, choose the radio button that makes the most sense:

- All
  This will show all events or instruments.
- Only
  This will show only the events or instruments that you have selected.
- All Except
  This will show only the events or instruments that you have not selected.

Unless you choose **All,** you should select the desired event types and instruments by clicking the appropriate dialog boxes.

For MIDI controllers, you can select choices that aren't currently visible. Click on the bold word and choose another controller from the controller pop-up list. You can also highlight the controller name and type a new number with the numeric keypad.

Although you can use this dialog to filter out MIDI data you do not wish to view, any data that is not displayed will still be selected if you use Select All, the Select dialog box, or if you select the data in another window.

Jump to Selection ⌘-J

Choosing this menu item will scroll the contents of the window to the Start Edit point. It will not affect the zoom factor or view filters.

Zoom to Fit (option-Z)

In Graphic windows and Notation windows, choose **Zoom to Fit** to show you the contents of the entire track.

In the Tracks window, choosing **Zoom to Fit** will show you all the track data in the track overview area.

Zoom Back (option-B)

In Tracks, Graphic, and Notation windows, this command will put the window back where it was before the last time you zoomed.

Auto Scroll

The **Auto Scroll** menu item is a toggle. When it is checked, Vision follows the counter and updates the contents of all open edit windows. When it is unchecked, the contents of the edit windows will not change with the counter.

If **Auto Scroll Top Window Only** is checked in the Preferences dialog, Vision will only update the active window, which can save time. See page 377 for more information.

Keyboard Equivalent: You can type Shift-4 to turn Auto Scroll on and off.

Play Edited Note

The **Play Edited Note** menu item is a toggle. When it is checked, Vision will play any note you click. If you transpose the note, you will hear the different transposition values as you drag it. You will also hear notes that you insert with the pencil tool.

When **Play Edited Note** is unchecked, you will not hear individual notes as you perform these edits.

Show Bouncing Ball

The **Show Bouncing Ball** menu item is a toggle. When it is checked, Vision will show an animated bouncing ball in the ruler of the Graphic and Notation windows. This ball will bounce on every beat, and provides visual feedback for following along with a playing sequence.

Show Vertical Line

The **Show Vertical Line** menu item is a toggle. When it is checked, Vision will display a vertical line in the graphic, notation, and track overview windows that shows the position of the counter as the sequence plays. You can show a bouncing ball and vertical line simultaneously.

Detailed Track Overview

The **Detailed Track Overview** menu item is a toggle. When it is checked, Vision will display detailed MIDI information in the Track Overview area of the Tracks window. You will be able to see the data in a piano roll or strip chart format (Studio Vision users will also see audio events where applicable).

When it is unchecked, Vision will not display the actual MIDI data, but will show a patterned block to indicate that data is present—this speeds screen redrawing time.

Counter and SMPTE Display Options

There are three counter display menu items:

- **Bar/Beat/Unit** (or **No SMPTE** in List windows).
- **Absolute SMPTE**
- **Relative SMPTE**

Only one of these items can be checked at a time—if you choose one of these, the other two will be unchecked.

You can show both Bar/Beat/Unit information *and* SMPTE information in the cursor displays at the same time by clicking the cursor icon in the cursor display—see page 167 for details.

The counter display will determine the type of display you will see in the edit window's edit points and cursor location fields. If **Bar/Beat/Unit** is checked, Vision will show you the information in bars, beats, and units (for a more detailed explanation, see page 153). In List windows, Vision always shows the Bars/Beats/Units information, so choosing this menu item will simply turn off the SMPTE display.

If **Absolute SMPTE** is checked, the edit window's counter displays will be shown in SMPTE time code. Vision will calculate this value based on the tempo and position, then add the SMPTE Offset value of the sequence.

If **Relative SMPTE** is checked, the displays will be shown in SMPTE but Vision will not add the SMPTE Offset value, so this will show the time elapsed from the beginning of the sequence.

Tool Selections

There are four different tool selection menu items as shown in Figure 13.6 on page 172. These are: Arrow, Marquee, I-Beam, and Pencil tools. Only one of these items can be checked at a time—if you choose one of these, the other three will be unchecked.

Choosing one of these items is identical to selecting the corresponding tool in the edit window. For more information, see "Editing Tools" on page 168.

Set Default Location

Choosing this menu item will cause the current window position on your Macintosh screen to become the default location for any new window created of that type. See "Setting the Default Window Location" on page 14 for more information.

CHAPTER 14: The Tracks Window

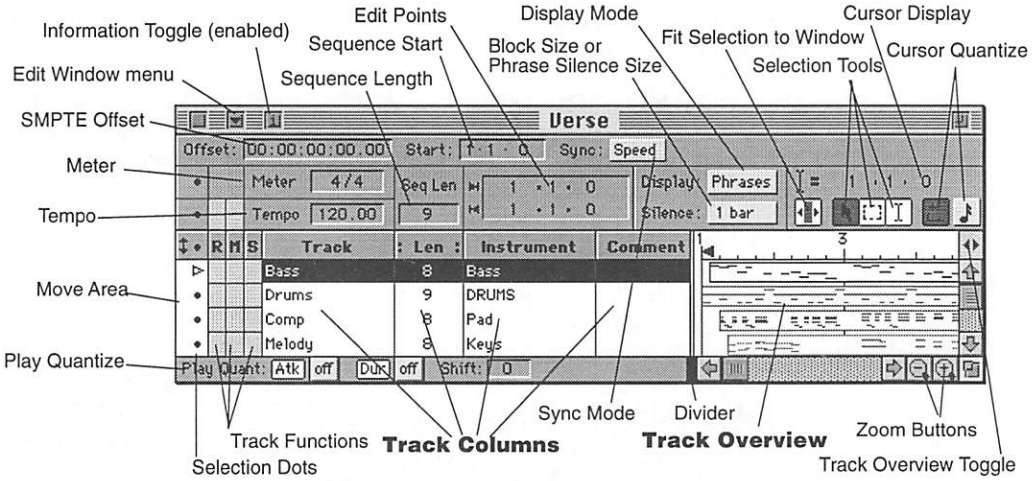


Figure 14.1: The Tracks Window

The Tracks window shows you the tracks in the current sequence, and allows you to make global selections and edits.

Tracks windows are Edit windows. The four Edit windows share some features and tools. If you are can't find the information you're looking for in this chapter, see *Chapter 13: Edit Window Common Features* beginning on page 165.

❑ Two Windows in One

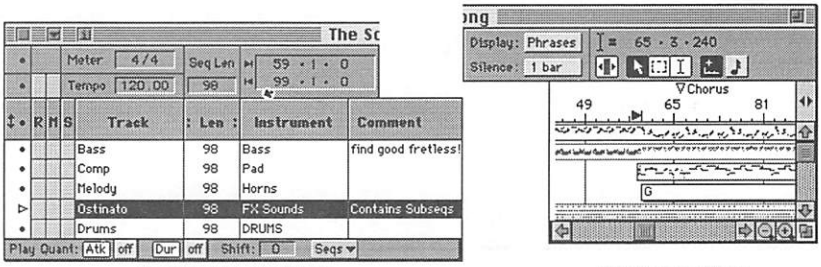


Figure 14.2: The Two areas of the Tracks Window

There are two areas of the Tracks window—Vision will respond differently depending on which area you are working. This distinction is transparent and subtle, but knowing it is crucial to understanding Vision.

When you choose items in the track columns, or select tracks using the selector dots (in the left portion of the window), Vision is in "Tracks" mode. You can tell this by noting that the Track Name, Length, Instrument, and Comment fields are all highlighted (as shown in Figure 14.2).

If you select tracks or partial tracks in Track Overview (on the right side of the window), Vision is in "Events" mode. You can tell you're in Events mode by noting that the Track Name, Length, Instrument, and Comment fields are not highlighted as shown in Figure 14.3.

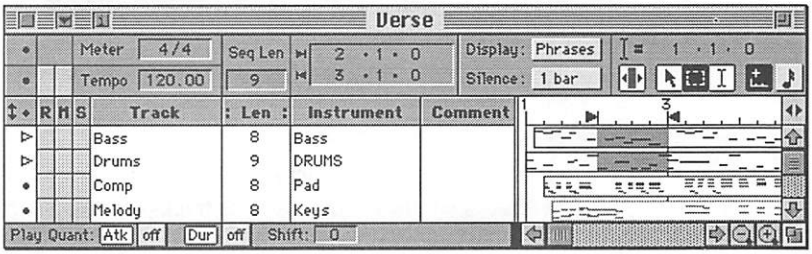


Figure 14.3: Events Mode Selection

Tracks Window Divider

This divider allows you to decide how much of the sequence window to use for track overview, and how much for track information. When you position the mouse over the divider, the cursor will change into a ↔, and you can drag the divider to change the size of both areas. This could cause the Track Overview area to cover Comments and other columns.

Track Overview Toggle

Click this button to show or hide the Track Overview section. If Track Overview is visible, clicking this button will hide Track Overview.

If Track Overview is not Visible, Vision will open Track Overview to the last location it was in.

"Tracks" Mode Area of Tracks Window

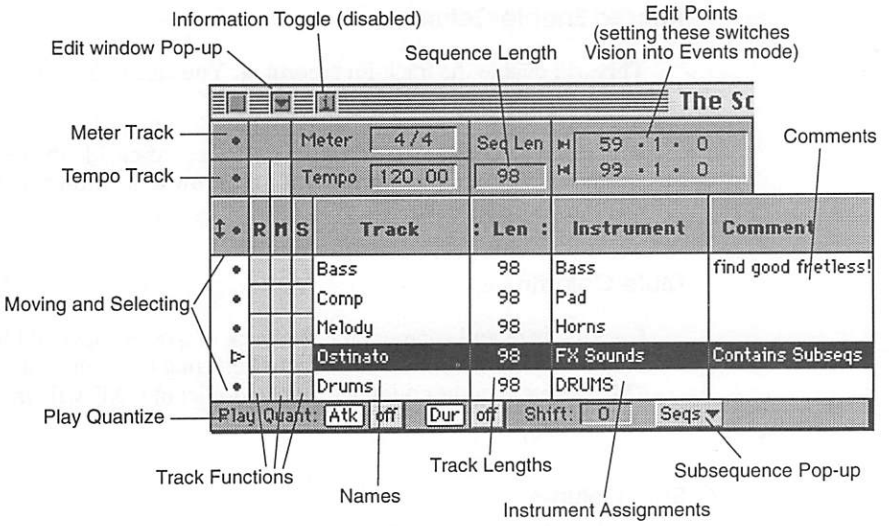


Figure 14.4: Tracks Mode Area Anatomy

Moving and Selecting Tracks

To select a track, click on the selector dot in the left column of the window. A selected dot will change into a triangle, and the track will highlight.

You can select multiple tracks by either dragging or holding down the command or shift key on your Macintosh keyboard while you click selector dots.

To de-select a track, either click a different selector dot or hold down the Command or Shift key on your Macintosh and click the selected triangle.

To the left of the selector dots is the Move Column. When the cursor changes into a ↕, you can change the position of the track in the window.

For more information (and illustrations) about moving and selecting tracks, see page 6 and page 7.

R M S Track Functions

Record Enable Column

This will enable the track for recording. You cannot have more than one track record enabled.

You can type **command-down arrow** to record-enable the next track in your sequence. You can type **command-up arrow** to record-enable the previous track in your sequence.

Mute Column

Clicking here will suppress the playback of a track. Several tracks may be muted or unmuted simultaneously by selecting them and clicking on the letter "M" at the top of the column. Command-clicking "M" will unmute all tracks in the sequence.

Solo Column

Clicking here will solo a track—or suppress the playback of all the other tracks in the sequence (except other soloed tracks, of course).

Several tracks may be soloed or unsoloed simultaneously by selecting them and clicking on the letter "S" at the top of the column. Command-click "S" to unsolo all tracks in the sequence.

Track Name Track

To enter or change the name of a track, highlight this field and type whatever you wish. Type **Enter** or click anywhere else on the screen to enter the new name.

: Len : Length and Looping

Theses fields show the length of the sequence and tracks. Option-click to lock and unlock this field. If you wish to loop a track or sequence, you can click on the sides of this field.

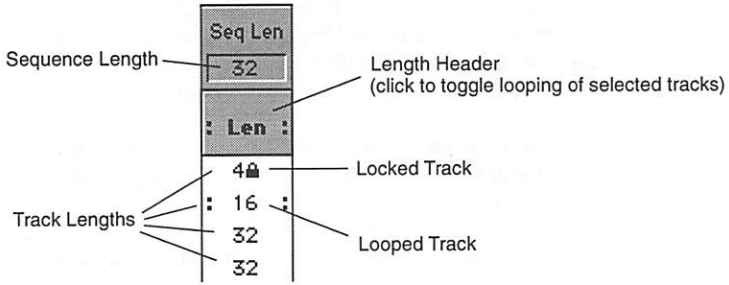


Figure 14.5: Track and Sequence Lengths

Vision will automatically set the sequence length to the greatest track length. This can be anywhere from less than a bar to infinity (∞). Vision will use a question mark (?) to represent an indefinite number of bars.

Locking a Track or Sequence Length

Option-click a track length to lock or unlock it. When a track length is locked, a small padlock icon (🔒) will appear, and Vision cannot automatically change its length (though you can do so manually).

Option-click the sequence length to lock or unlock the length of a sequence. If you record a track that is longer than the sequence length, Vision will lengthen the sequence automatically unless the sequence length is locked.

Looping a Track or Sequence

To have a track or sequence play indefinitely, you can set the loop option. To turn on looping, click the side of the length field.

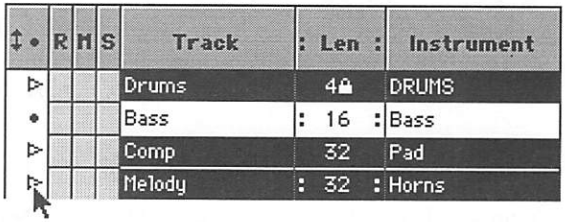
Figure 14.6: Looping

When a *track* loops, Vision plays the track contents (beginning at the sequence start point) over and over, regardless of what the other tracks are playing. All tracks will loop independently of each other—if one track is set to loop every 2 bars, and another every 3 bars, the tracks will coincide every 6 bars.

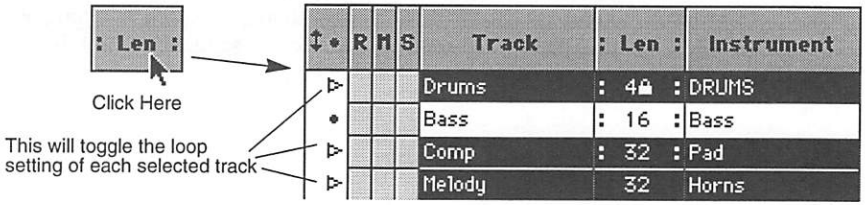
When a *sequence* loops, Vision restarts all tracks at the sequence start point after it reaches the end of the sequence. This includes the tempo and meter tracks.

You can loop or unloop several tracks simultaneously:

1. **Select the Tracks you wish to loop.**



2. **Click the Length heading at the top of the Track Length Column.**
   If any tracks are already looped, this will unloop them.



Instrument Assignments

The instrument assignment field displays the instrument for each track.

Each track is assigned to an instrument for playback. You can also have Multi tracks, which are assigned to several instruments. When you record a track, the current instrument (shown in the Control Bar) is automatically assigned to the track.

To change a track's instrument assignment, choose a new instrument from the pop-up that appears when you click the Instrument field for that track.

Multi Instruments

When you have one track assigned to more than one instrument, the word "Multi" appears in the Instrument field. You can select new Instruments in a multi-instrument track as shown in Figure 14.7.

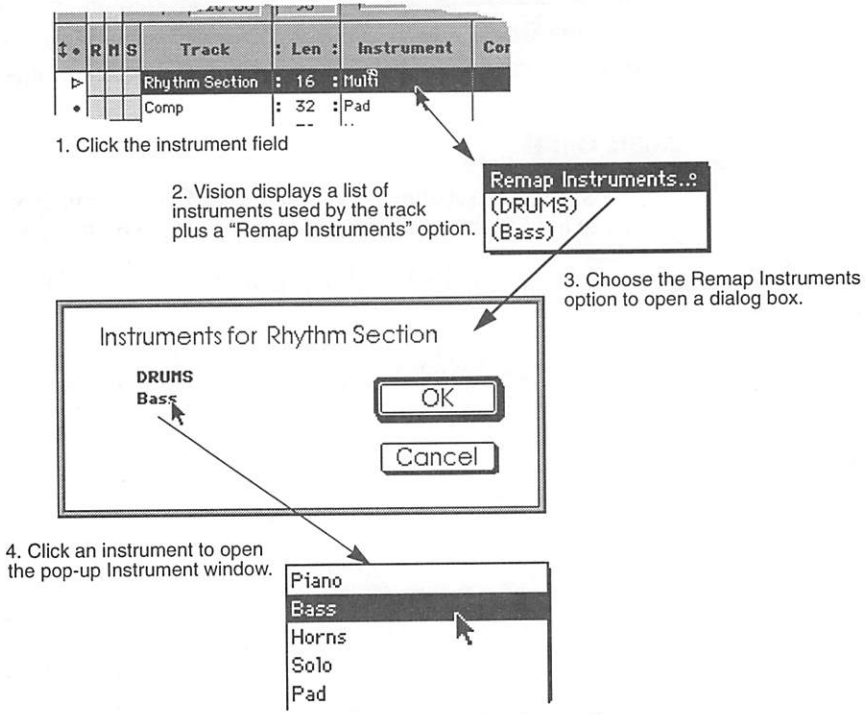


Figure 14.7: Changing a Multi track instrument assignment

You can split Multi tracks into separate tracks using the **Separate Multi Tracks** command in the **Edit** menu. See page 321 for more information.

Comments

You can type any text into this area; use it to make notes about the tracks.

Information Toggle

If you use the sync and offset settings, you will probably set them once and forget them. Click the Information toggle to show and hide this information.

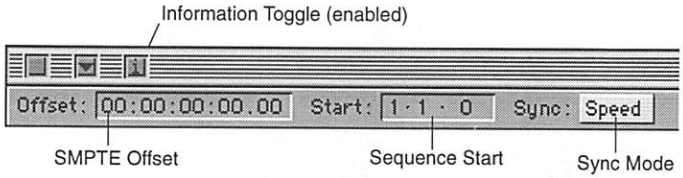


Figure 14.8: Click the Information Toggle to show and hide this sequence information

SMPTE Offset

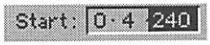
The SMPTE offset allows you to set the SMPTE start time of a sequence. This is also used as the basis for computing the SMPTE times shown in the List windows.

Sequence Start

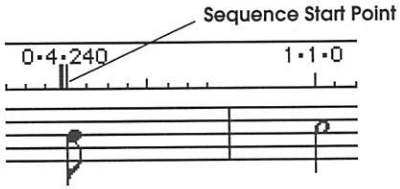
Use the sequence start point to create a pickup for the sequence. Every Sequence has a start point, located somewhere in the first bar. If the start point is 1•1•0 (as shown in Figure 14.8), the sequence will start in bar 1. Otherwise, it will start somewhere in bar 0.

For example, to set an eighth note pickup for the sequence:

1. **Set the Sequence Start to 0•4•240.**



If you open an Edit window now, you can see that the sequence starts at 0•4•240, an eighth note earlier than bar 1. If you have any events before the start point, they will play at the start point.



Sync Mode

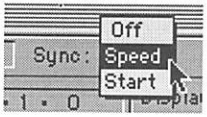


Figure 14.9: The Sync Mode Pop-up

Each sequence has its own Tempo Track which usually determines the tempo which the sequence plays. However, Vision also allows you to play several sequences simultaneously (see "Playing Subsequences Simultaneously" on page 121), and it allows you to synchronize to an external clock. In these cases, you can decide whether each sequence will play in sync with the others and with the external clock, or whether it will always use its own Tempo Track.

The Sync mode defines the tempo source of a sequence and how it syncs with other sequences. There are three sync modes—use the Sync mode pop-up to choose one.

- Off

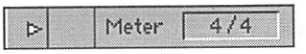
  The sequence will play independently of the master tempo (unless you are recording it with an external MIDI clock). In this mode, Vision must perform more real-time computation than other settings—this should only be used if you want to play sequences simultaneously with independent tempos.
- Speed (The default setting)

  The sequence will use the master tempo. Triggering the sequence when something is already playing will start playing this sequence immediately.
- Start

  The sequence will use the master tempo. Triggering the sequence when something is already playing will wait until the Counter "comes around" to beat 1 (or whatever the sequence's Start Point is set to) before starting the sequence, so it's in sync with what was playing before.

You cannot change the Sync mode while you are playing or recording.

The Meter Track



Every sequence has a meter track that may contain three types of information: meter changes, key signature changes, and markers.

Meter Changes

Figure 14.10: Meter Tracks in the Tracks Window

If your sequence has a constant meter, it is shown in the Tracks window where you can edit it. Simply click the top number and enter a new value, or choose a bottom number from the pop-up.

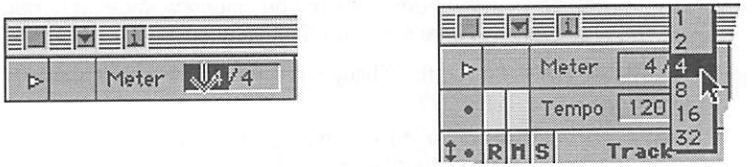


Figure 14.11: Changing the meter in the Tracks window

If your sequence contains meter changes, you must make edits from a List or Notation window. To open a List window, double-click the selector dot. See also "Changing the Meter in Notation Windows" on page 219 and "Inserting Meter Changes in a List Window" on page 229. To automatically add meter changes, see "Re-clocking to a Click Track" on page 56.

Key Signature Changes

You must view and edit key changes from within a List or Notation window. See "Changing the Key in Notation Windows" on page 219 and "Inserting Key Changes in a List Window" on page 230 for more information.

Markers

Markers allow you to quickly move to different counter locations. For information on using markers, see "Marker Pop-up" on page 156. For information on inserting markers, see either **Insert Bar Marker** or **Insert SMPTE Marker** in the **Do** menu chapter (page 348), or "Inserting Markers in a List Window" on page 230.

The Tempo Track

The tempo display displays the tempo for the sequence. The tempo track contains only tempo change events. For a new sequence, the tempo track contains one tempo change event at the beginning of the sequence.

If a sequence has only one tempo setting, the value is editable from the Tracks window. If the sequence contains tempo changes, you must open an Edit window to edit the meter changes.

Constant tempo

Changing tempo

Figure 14.12: Meter Tracks in the Tracks Window

If you have changing tempos in a track, you can double-click the selector dot to open a List window, where you can view and edit tempo changes for the sequence. There are several ways to edit the tempo for the sequence:

- To use the Change Tempo dialog, see "Change Tempo (option-')" on page 344.
- To change the tempo in the Strip Chart, see "Editing the Tempo in the Strip Chart" on page 76.
- To create tempo changes in a List window, see "Tempo Track List Windows" on page 230.
- To record tempo changes in real time, see "Virtual Conducting—Recording a Tempo Track" on page 42.
- To make the sequence play at the master tempo setting (in the Control Bar), see "Tempo Display" on page 154.
- To make subsequences play at their own tempo, see "Sync Mode" on page 188.
- To add tempo changes automatically while scaling time, see "Editing a Rubato Performance" on page 50.

❑ Track Overview—Viewing and Editing Blocks

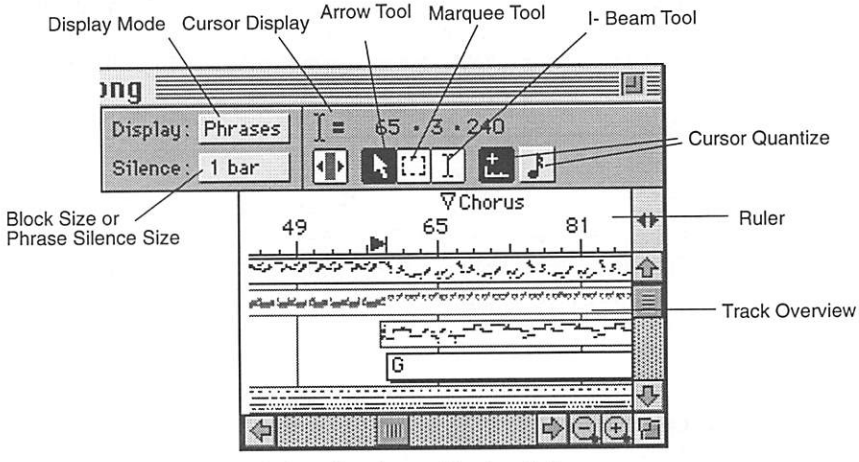


Figure 14.13: Track Overview Area of Tracks window

> **NOTE:** The Track Overview can display any part of the sequence at any level of magnification.

Display Modes

The track overview has three display modes:

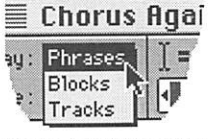
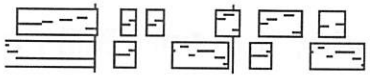


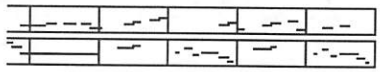
Figure 14.14: The Display Mode pop-up

If **Detailed Track Overview** is enabled in the Edit window pop-up (see page 176), Vision displays actual MIDI data (either a miniature piano roll or a strip chart) in the Track Overview. The strip chart data will be visible only if there are no MIDI note events occuring at the same time.

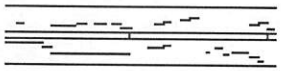
If a track contains both subsequences and MIDI data, the subsequence will visually obscure the MIDI data in the Track Overview.

Phrases 

Phrases mode will group MIDI events into blocks. It will create a block out of MIDI events that occur together closely in time, but are separated from other MIDI events by silence that is at least the size of the value chosen from the Phrase Silence Size pop-up (see below).

Blocks 

Blocks mode displays equal-size blocks. You can pick the size of the block with the Block Size pop-up.

Tracks 

In Tracks mode, the entire track is a block. This allows you to choose the entire track with a single mouse click in Track Overview. In all display modes, a subsequence always becomes its own block.

Block Size/Phrase Silence Size Pop-Up

When you are viewing tracks in Phrases or Blocks mode, you can choose the display resolution from this pop-up. In Phrases mode, this will define the amount of time that a track must be silent in order for Vision to break it into separate blocks. In Blocks mode, this will define the size of the block.

Using the Arrow Tool in Track Overview

With the arrow tool selected, click on blocks to select them. You can shift-click the blocks to select more than one, and many discontiguous blocks can be selected.

This will select all types of MIDI data in the tracks you select (not just the notes).

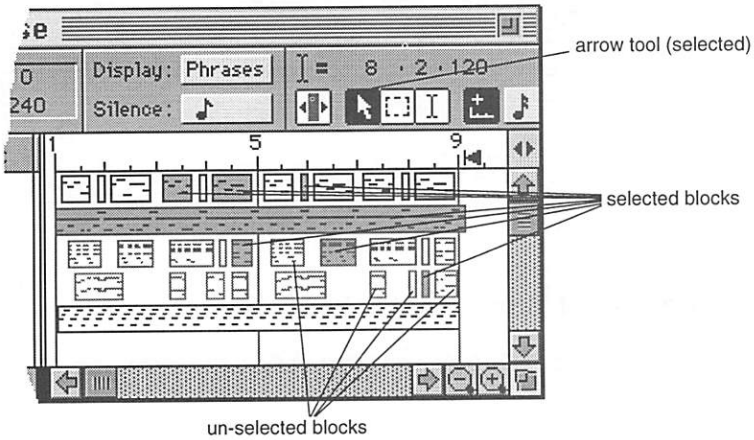


Figure 14.15: Selecting Blocks

If you drag a selection rectangle with the arrow tool selected, any block that the rectangle touches will be selected.

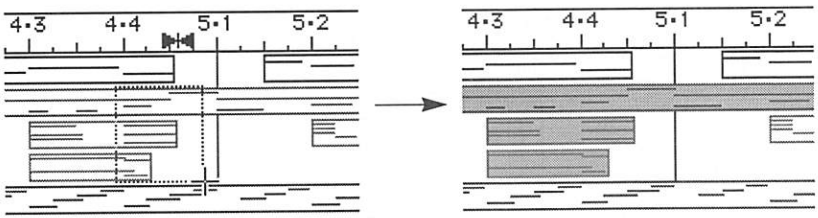


Figure 14.16: A selection rectangle with the Arrow Tool

Using the Marquee Tool in Track Overview

Use the Marquee tool to select a time range of blocks in the track overview window. Drag a selection rectangle around the portion of the block(s) you wish to select.

This will select all types of MIDI data in the tracks you select (not just the notes).

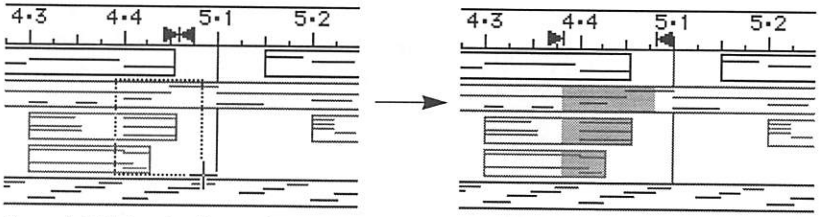


Figure 14.17: A selection rectangle with the Marquee Tool

Using the I-Beam Tool in Track Overview

Use the I-Beam tool to select a time range of all tracks in a sequence. The Tempo track will also be selected.

This will select all types of MIDI data in all the tracks you select (not just the notes).

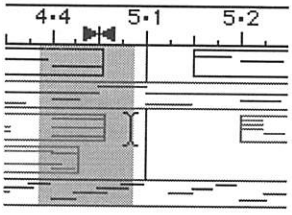


Figure 14.18: All tracks will be selected with the I-Beam tool

Selecting in the Track Overview Ruler

Anytime you move a cursor into the ruler (regardless of the selected tool), it turns into the I-Beam tool. Drag the cursor in the ruler to select a time range on all tracks in the Track Overview. If you just click in the ruler, the Edit In point will be set, but you won't select all the tracks. This allows you to copy a selection, click a destination time, then paste.

Dragging Blocks in Track Overview

Use the arrow tool to drag blocks in Track Overview. If you drag a block from one track to another, the contents of the block will be merged into the contents of the destination track. The information will automatically be assigned to the instrument of the destination track.

If you drag a block to a multi-instrument track, then the merged data will maintain its original Instrument assignment.

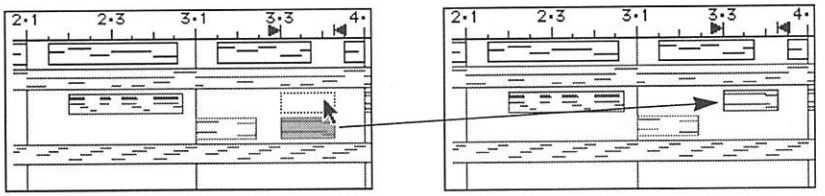


Figure 14.19: Moving a block to a different track

If you drag a block horizontally, you will change the time where it begins playing.

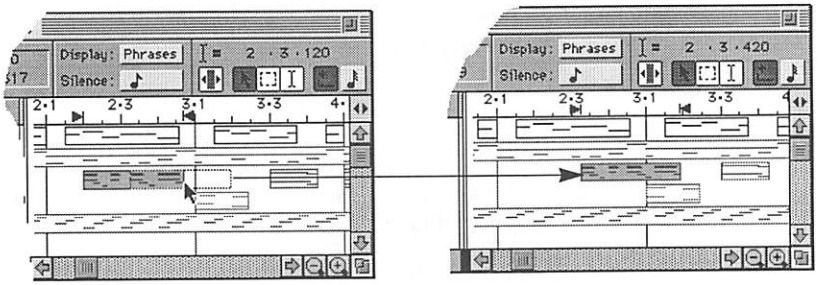


Figure 14.20: Changing the start time of a block

When you are dragging blocks, you should use cursor quantize to help you position the block. See "Using Cursor Quantize" on page 89 for more information.

You can option-drag blocks to keep the original block untouched while copying it to a new location.

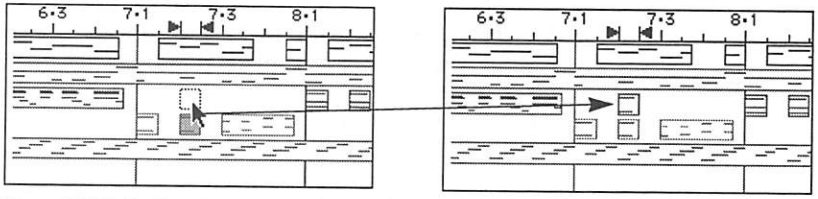


Figure 14.21: Option-drag to make a copy while moving a block.

❑ Generated Sequences

Vision can generate sequences based on performances you have recorded. You can use a Generated Sequence Tracks window to set up the way Vision will create a sequence.

There are four elements that Vision needs to generate a sequence:

1. **A Note Track (and a Rhythm Track—optional)**
2. **An Attack Mode**
3. **A Duration Mode**
4. **An Order**

Vision can take information from each of these elements to generate different sequences. This can be a useful tool when you know a rhythm you want to use, but you're not sure of the notes. In this case, you can have Vision randomly play a group of notes in a particular order.

The best way to learn about generated sequences is to experiment with them. You can hear how Vision responds to different modes more quickly than anything you read.

Creating a Generated Sequence

You must create a new generated sequence from the Sequences window. Choose **New Generated Sequence** from the Sequences Window menu (see page 163 for an illustration of this menu).

When you create a new generated sequence, the Generated Sequence Tracks window appears:

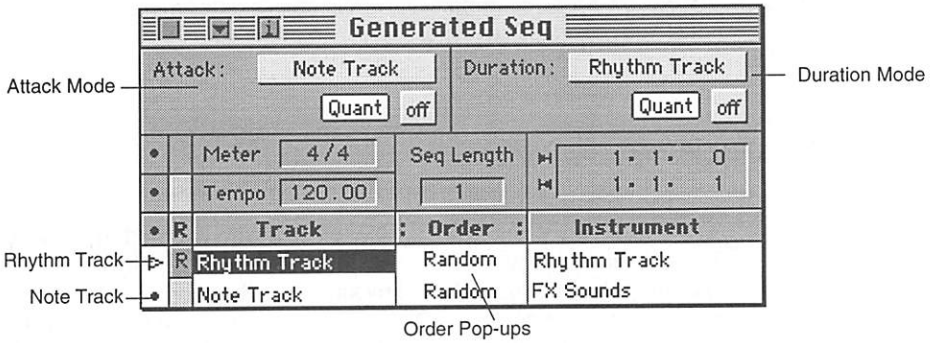


Figure 14.22: Generated Sequence Tracks Window

This is very similar to a normal Tracks window. There are some differences—there is no Track Overview section, and you cannot solo or mute tracks. See earlier sections in this chapter for an explanation of the items in this window besides those listed here.

Attack Mode

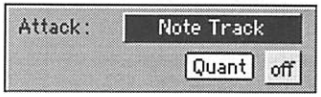
Figure 14.23: Attack Mode Pop-up

The Attack Mode determines how Vision generates the timing placement of notes in a generated sequence.

Rhythm Track

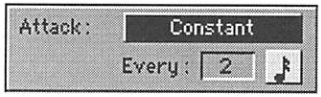
Vision will play the notes in the Note Track with the rhythm of the Rhythm Track. You can allow the velocities of the notes in the Rhythm Track to influence the velocities of the Note Track notes as they are played. This influence is expressed as a percentage: 100% means only the Rhythm Track velocities are used; 0% means only the Note Track velocities are used; an intermediate value combines the two. You can choose to quantize the playback of this track.

Note Track



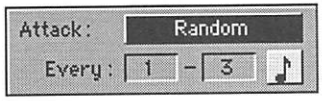
The generated sequence will use the note spacings recorded in the Note Track. You can choose to quantize the playback of this track.

Constant



Vision will play notes at a constant rate. Choose the rate by selecting a number and note value—in the example above, Vision will generate a note every eighth note (i.e., every 2 sixteenth notes).

Random



Vision will play notes at a random rate based on the range you set in these fields. In this example, Vision will generate a note every eighth note (1 x 8), quarter note (2 x 8), or dotted quarter note (3 x 8).

Duration Mode

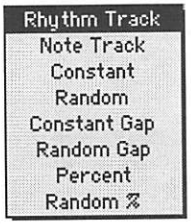
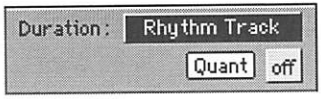


Figure 14.24: Duration Mode Pop-up

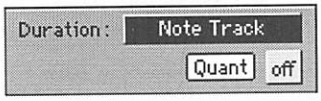
The Duration Mode determines how Vision generates durations for a sequence.

Rhythm Track



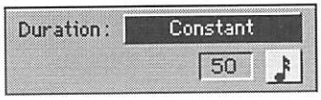
Vision will take the durations from the Rhythm Track you recorded.

Note Track



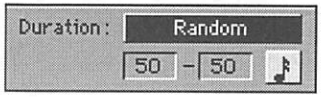
Vision will take the durations from the Note Track you recorded.

Constant



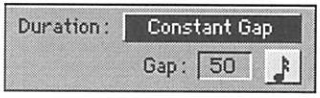
In this mode, the duration of a generated note will always be the same.

Random



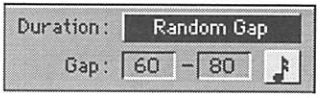
The duration will be a random length within the range you specify.

Constant Gap



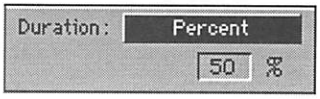
With a gap setting, each note will be separated by the same amount of space. You can set the gap size as a number of units.

Random Gap



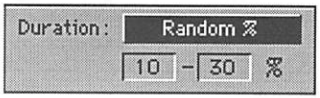
With a random gap, Vision will generate a random gap setting within the range you specify.

Percent



With percent duration, each generated note will last for a percentage of the note size. With 100% duration, the notes will be the same size as the note size, and will sound legato. Duration may be over 100%—in this case, the notes will overlap. Durations under 100% will result in gaps between the notes proportional to the note spacing.

Random Percent



This is identical to a random setting, but Vision will use a range of percentages to determine the duration of the generated sequence.

For illustrations of gap and percent settings, see the area that describes these modes in the Note Size window starting on page 287.

Generated Sequence Tracks

There are four tracks in a generated sequence:

- Meter
- Tempo
- Rhythm
- Note

Meter and Tempo Tracks work exactly the same way here as they do in normal Tracks windows. See page 189 and page 190 for more information on these tracks.

You can record all of these tracks as you would normally—Vision will use the information you record to generate a new sequence. You can also edit these tracks or paste tracks into them from other sequences.

Rhythm Track

The Rhythm track is optional. You may store rhythmic patterns which can be assigned to the notes recorded in the Note track. It may also be used to store a collection of note spacings and durations which Vision can randomly play. The Rhythm track is only used if either the Attack Mode or the Duration Mode is set to **Rhythm Track**. Otherwise, it is not used at all.

When you record a Rhythm Track, Vision will remove all events except notes, chords, and subsequences. Only the durations and spacings of these events is significant—Vision ignores all other information during playback.

Note Track

The Note Track of a generated sequence stores the notes, chords, and subsequences Vision will use to create a new sequence. Vision will use the Rhythm Mode to determine the spacing of the events and the Duration mode to determine the duration of each event.

When you record a Note Track, Vision will remove all events except notes, chords, and subsequences. The durations and spacings are not significant unless the Attack Mode or Duration Mode is set to **Note Track.** Otherwise, the durations and spacings are also ignored.

Order Pop-up

Figure 14.25: Generated Sequence Order Pop-up

You can choose the order that the Note Track and Rhythm Track will play their contents—Vision will use the Attack and Duration modes with the order information to generate a sequence.

Forward

The events in the track are played in the order they occur.

Reverse

The events in the track are played in the reverse order they occur in the track.

Alternate

The events in the track will play in the order they occur, then in reverse order. First and last events are only played once.

Random

The events in the track will play in random order.

Looping Generated Sequence Tracks

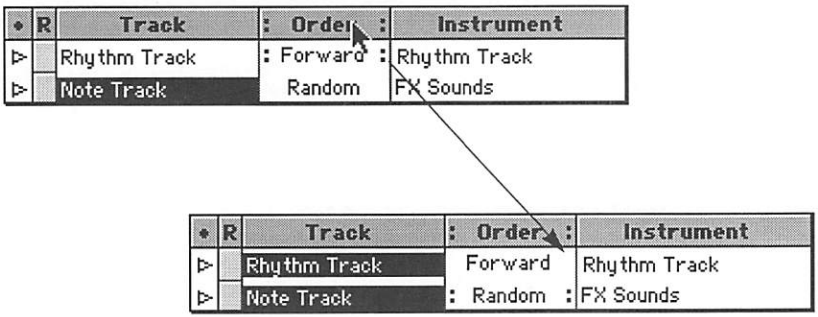
The procedure for looping tracks is the same as other Tracks windows (see page 183), but track looping works somewhat differently. Unlike normal tracks, the length of a track is not important in a generated sequence—the number of events is what matters.

An unlooped generated sequence will stop playing after it has played all of the events in an unlooped Note Track. If the Note Track order is alternate, Vision will play twice as many notes because the Track will need to play twice.

If the note track is looped, the generated sequence will play for its Sequence Length (or indefinitely if the sequence is looped or set to infinity).

If you are using the Rhythm Track and it isn't looped, the generated sequence will stop when the end of the Rhythm Track is reached. This depends on the order of the Rhythm Track in the same manner as the Note Track.

Like the **Length** header in normal Tracks windows, clicking the **Order** header in Generated Sequence Tracks window will toggle the loop setting of all selected tracks.



CHAPTER 15: Graphic Windows

You can view and display your MIDI data in a "Piano Roll" format using a Graphic window. You can display one track or many tracks in the same Graphic window, and you can display many Graphic windows at the same time.

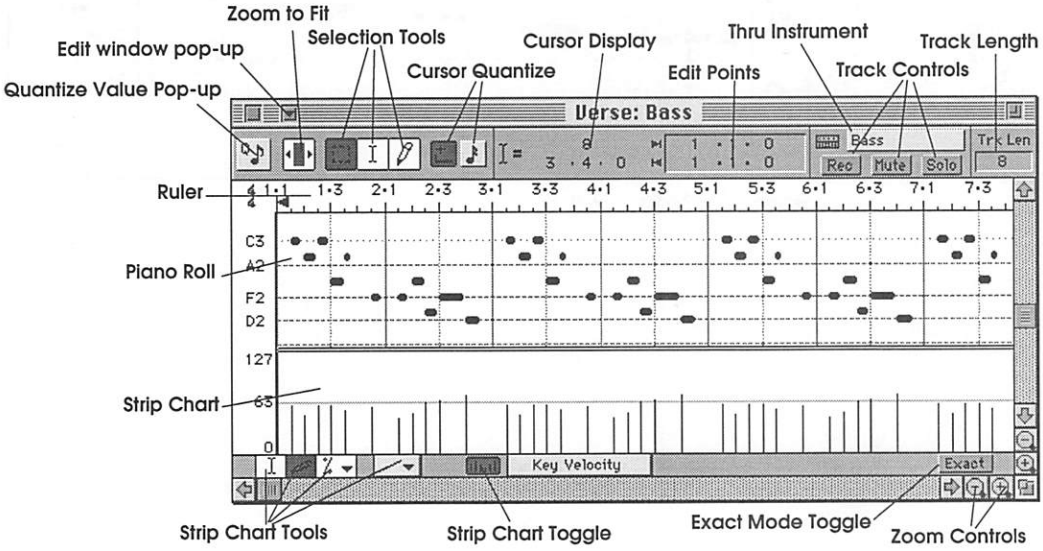


Figure 15.1: A Graphic Window

Graphic windows are Edit windows. The four Edit windows share some features and tools. If you are can't find the information you're looking for in this chapter, see *Chapter 13: Edit Window Common Features* beginning on page 165.

In Graphic windows, Vision displays notes graphically as rectangles (very short notes are displayed as X's). The display area is called the piano roll. The vertical position of each rectangle shows the pitch of each note, and the duration is represented by the length of the rectangle. If you have a color monitor, you can assign a different color for each instrument in the track.

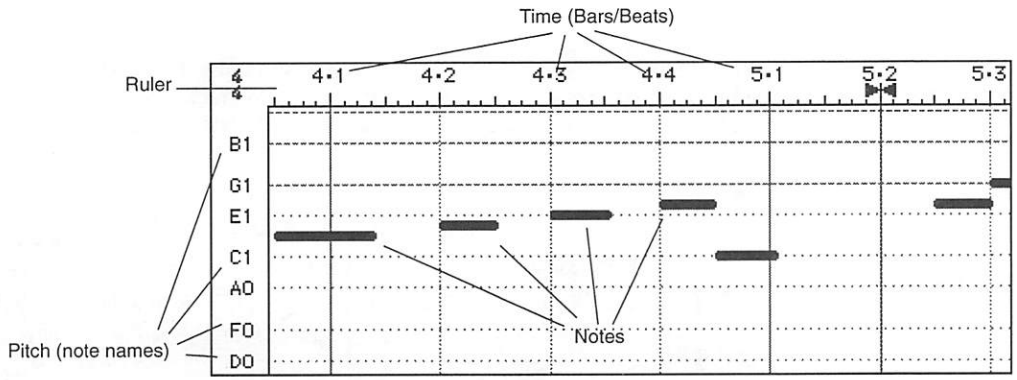


Figure 15.2: The Piano Roll

❑ Selecting Notes in a Graphic Window

You can select notes individually or in groups. To select a single note, simply click on it. To select additional individual notes, shift-click them. To de-select a selected note, shift-click on it. You can tell a note is selected because it is hollow instead of solid.

Using the Marquee Tool

You can select notes in a rectangular area by using the Marquee tool. With the Marquee tool selected, click in one corner and drag to the other—all notes which begin within the rectangle will be selected.

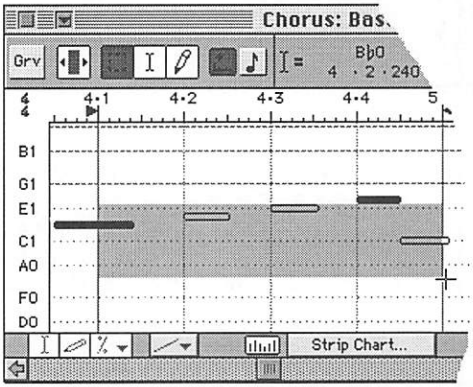


Figure 15.3: Selecting notes in the Piano Roll using the Marquee tool. Notice that the note attacks must be included for the notes to be selected.

Make sure the cursor is a cross: When using the Marquee tool, be sure the cursor is a cross when you start to drag the rectangle—if it's a note modification cursor, it means you're clicking in a note, and you'll change the note rather than select a group of notes.

Using the I-Beam Tool to Select a Time Range

You can select notes in a time range by using the I-beam tool. With the I-beam tool selected, drag across the time area to select a time range. All highlighted notes in the displayed tracks will be selected.

This method will not select pitch bend, modulation or controller events (see "Selecting all Types of MIDI Data in a Time Range" on page 209).

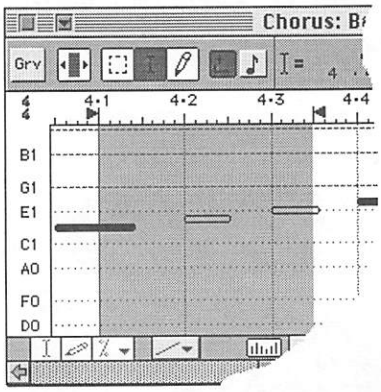


Figure 15.4: Defining a specified time range in the Piano Roll

Using the I-Beam Tool to Select a Pitch Range

You can select all notes in a specified pitch range using the I-beam tool. When you make a selection this way, you will select the entire track length. The horizontal I-beam is available to the left of the Piano Roll at all times.

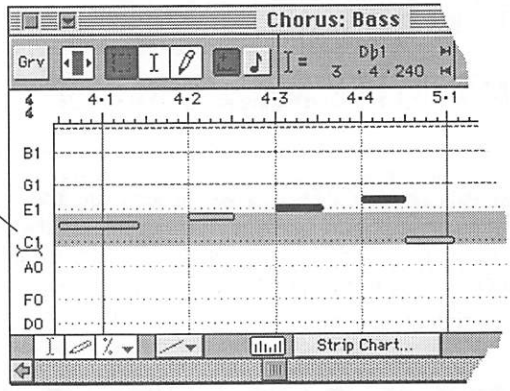


Figure 15.5: Defining a specified pitch range in the Piano Roll

Selecting all Types of MIDI Data in a Time Range

If you want to select all MIDI data types (not just notes), position the cursor within the ruler while making a selection. The cursor will change into an I-Beam no matter which tool is selected, an you will select all MIDI data contained within the time period of the time range you define (including program changes, pitch bend, and so on).

This I-beam tool is available in the ruler at all times, even if the Marquee tool is currently selected.

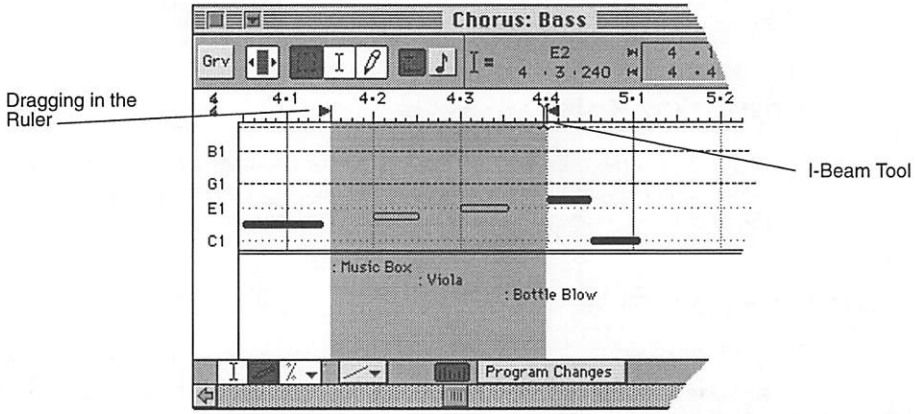


Figure 15.6: Dragging in the ruler will select all types of MIDI data. (You don't need to have the Strip Chart showing.)

❑ Modifying Notes in a Graphic Window

There are three note modification cursors that help you modify notes directly in the Piano Roll. You can watch the cursor position field to accurately change the note properties.

When you are moving or transposing notes, you can hold down the option key on your Macintosh keyboard to copy the note before modifying it. This will leave the original data intact.

Moving Notes

If you position the cursor over the left portion of a note, the cursor turns into a Move cursor, letting you change the begin point of that note by clicking and dragging left or right. Any other selected notes will be dragged along with it. You can only move notes left or right horizontally.

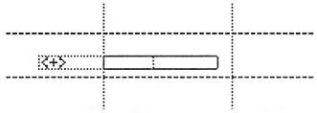


Figure 15.7: Moving a Note in the Piano Roll

Transposing Notes

Positioned in the middle of a note, the cursor becomes a transpose cursor, which allows you to change the pitch of the note. Drag up or down to change the pitch.

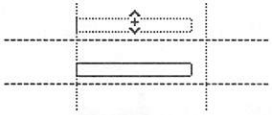


Figure 15.8: Transposing a Note in the Piano Roll

Changing a Note's Duration

Over the rightmost portion of a note, the cursor becomes a Duration cursor, which allows you to change the length of the note. Just drag horizontally to the left to shorten the note, or drag to the right to lengthen the note.

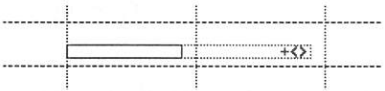


Figure 15.9: Changing a Duration in the Piano Roll

CHAPTER 16: Notation Windows

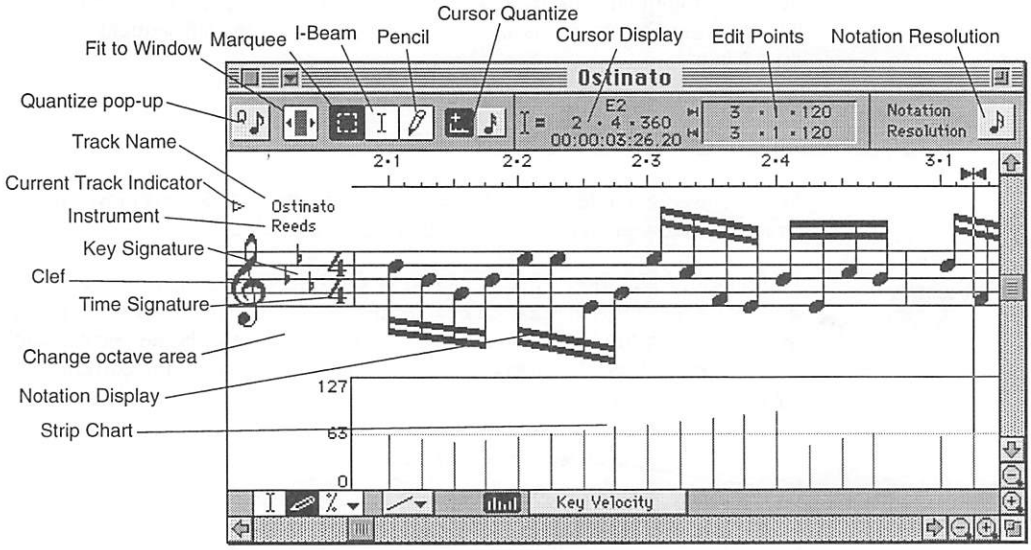


Figure 16.1: The Notation Window

Vision Notation windows display MIDI information using standard music notation. Vision interprets the MIDI information and displays it on a staff. Tracks are represented on either one or two staves depending on their note range. You can view multiple tracks in this window, and you can open several Notation windows simultaneously. The contents of the Notation window will determine which tracks you will print as notation.

Notation windows are Edit windows. The four Edit windows share some features and tools. If you are can't find the information you're looking for in this chapter, see *Chapter 13: Edit Window Common Features* beginning on page 165.

❑ Selecting Notes in the Notation Window

You can select notes individually or in groups. To select a single note, simply click on the note head. To select additional individual notes, shift-click them. To de-select a selected note, shift-click on it. You can tell a note is selected because the note head is hollow instead of solid.

Notes are sometimes represented by a series of tied notes—especially when you have long notes. In this case, you must click the *first* note head to select it. The note modification cursors are not available over the subsequent note heads.

Selecting Tracks in a Notation Window

When you select notes in one or more tracks in the Notation window, the Tracks window updates to show which tracks are selected.

Although the Notation window can show multiple tracks, only one can be defined as the "current track". The current track is indicated by a small triangle as shown in Figure 16.2. The strip chart shows data for only the current track. If you want to view the strip chart for another track, make it the current track by clicking its staff.

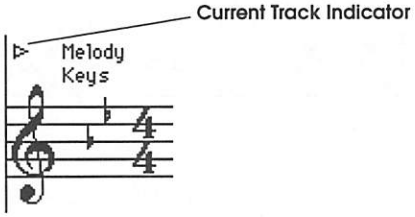


Figure 16.2: Current Track Indicator

For more information on showing multiple tracks in a Notation window, see "Showing and Hiding Tracks in a Notation Window" on page 19.

Using the Marquee Tool

You can select notes in a rectangular area by using the Marquee tool. With the Marquee tool selected, click in one corner and drag to the other—all notes which begin within the rectangle will be selected.

This method will not select pitch bend, modulation, or controller events (see "Selecting all Types of MIDI Data in a Time Range" on page 215).

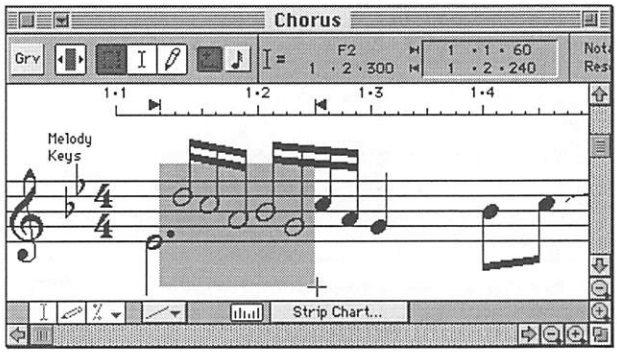


Figure 16.3: Selecting notes in the Notation window using the Marquee tool. Notice that the note attacks must be included for the notes to be selected.

Make sure the cursor is a cross: When using the Marquee tool, be sure the cursor is a cross when you start to drag the rectangle—if it's a modification cursor, it means you're clicking in a note, and you'll change the note rather than select a group of notes.

Using the I-Beam Tool to Select a Time Range

You can select notes in a time range by using the I-beam tool. With the I-beam tool selected, drag across the time area to select a time range. All highlighted notes in the displayed tracks will be selected.

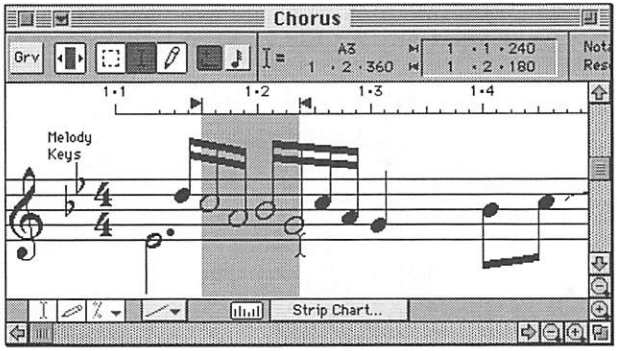


Figure 16.4: Defining a specified time range in the Notation window

Using the I-Beam Tool to Select a Pitch Range

You can select all notes in a specified pitch range using the I-beam tool. When you make a selection this way, you will select the entire track length. The horizontal I-beam is available at the left of the Notation Area at all times.

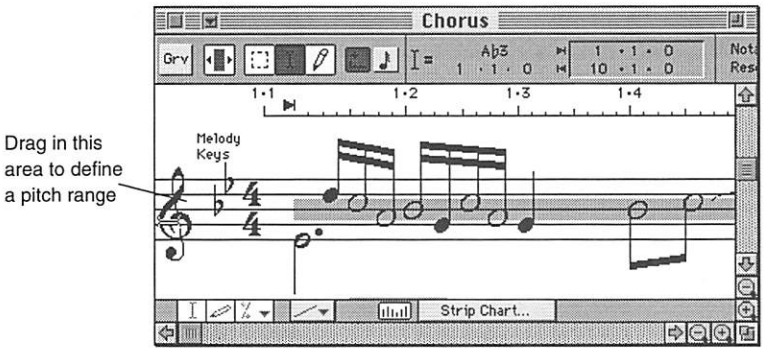


Figure 16.5: Defining a specified pitch range in the Piano Roll

Selecting all Types of MIDI Data in a Time Range

If you want to select all MIDI data types (not just notes), position the cursor within the ruler while making a selection. This will select all MIDI data contained within the time period of the time range you define (including program changes, velocity, pitch bend, and so on).

This I-beam tool appears whenever you move the cursor into the ruler.

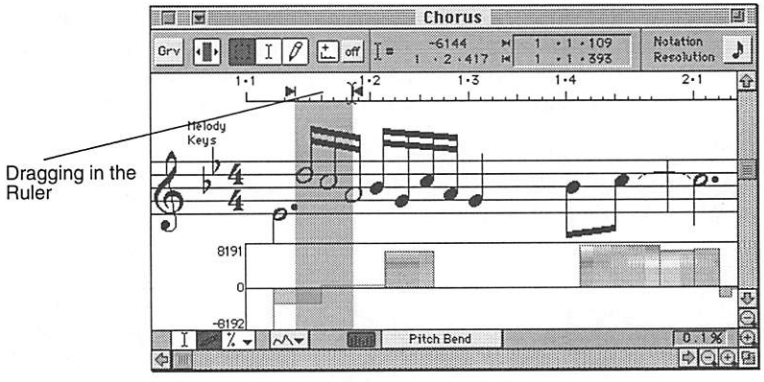


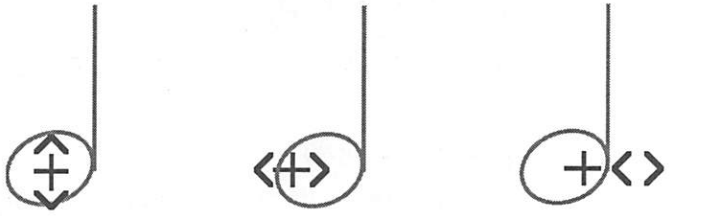
Figure 16.6: Dragging in the ruler will select all types of MIDI data. (You don't need to have the Strip Chart showing.)

❑ Modifying Notes in the Notation Window

You can modify any of three note elements by dragging a note in the Notation window. Specifically, you can modify:

- its pitch
- its start time
- its duration

The position of the cursor over a notehead determines which element you modify. When the cursor is over the center of a notehead you can change its pitch; when the cursor is over the left of a notehead, you can change its start time; when the cursor is over the right of a notehead, you can change its duration.



Transpose Cursor
• Appears over center of note
• Use to raise/loser pitch

Move Cursor
• Appears over left of note
•Use to move earlier/later

Duration Cursor
•Appears over right of note
•Use to change note duration

Figure 16.7: The Transpose, Move, and Duration Cursors

When you are moving or transposing notes, you can hold down the option key on your Macintosh keyboard to copy the note before modifying it. This will leave the original data intact.

Moving Notes

If you position the cursor over the left portion of a note, the cursor turns into a Move cursor. Use the move cursor to drag the beginning time of notes to the left or right. Any other selected notes will be dragged along with it. You can only move notes horizontally with this cursor.

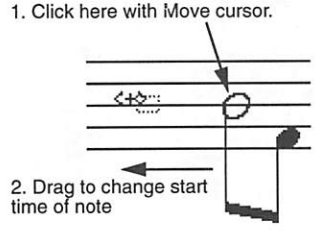


Figure 16.8: Moving a Note in the Notation window

Transposing Notes

Positioned in the middle of a note, the cursor becomes a transpose cursor, letting you change the pitch of the note. Drag up or down to change the pitch.

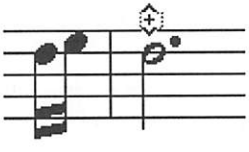



Figure 16.9: Transposing a Note in the Notation window

+<> Changing a Note's Duration

Over the rightmost portion of a note, the cursor becomes a Duration cursor, which allows you to change the length of the note. When you press the mouse button down, the duration pop-up will appear, allowing you to change the duration of the note.

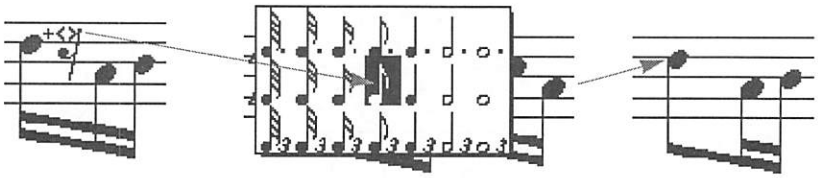


Figure 16.10: Changing a Duration in the Notation window

You cannot modify rests: Rests are automatically inserted by Vision in the absence of music. To change a rest, you must modify the notes around the rest. You cannot modify a rest directly.

If you see a lot of rests, you can try setting a larger Notation Resolution—this generally decreases the amount of rests. See "Notation Resolution" on page 91 or "Tips for Good-Looking Scores" on page 102 for information on making your music look better.

❑ Changing Key and Meter

Changing the Meter in Notation Windows

To change the meter in a notation window, click on the meter element you wish to change. To change the top number, you can select it and enter a new number. To change the bottom number, press and hold the mouse on it and select a new value from its pop-up menu. Vision will automatically change the meter in the Meter track. The change will affect all bars after the existing meter change. To insert a new meter change you must use the List window.

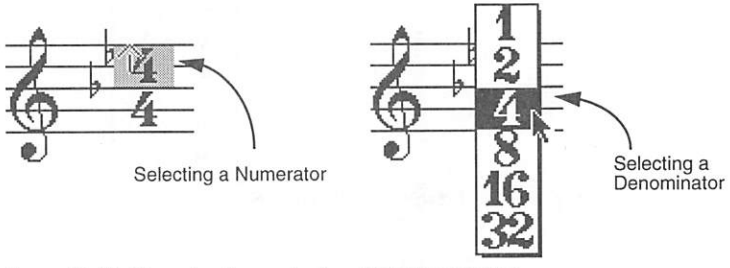


Figure 16.11: Changing the meter in a Notation window

Changing the Key in Notation Windows

To change the key in a Notation window, choose a new key signature from the key signature pop-up. Vision will automatically change a key in the Meter track. To insert a key change, use the List window.

When you position the mouse over the key signature, the cursor will change into a sharp (♯), indicating that you can change the key signature.

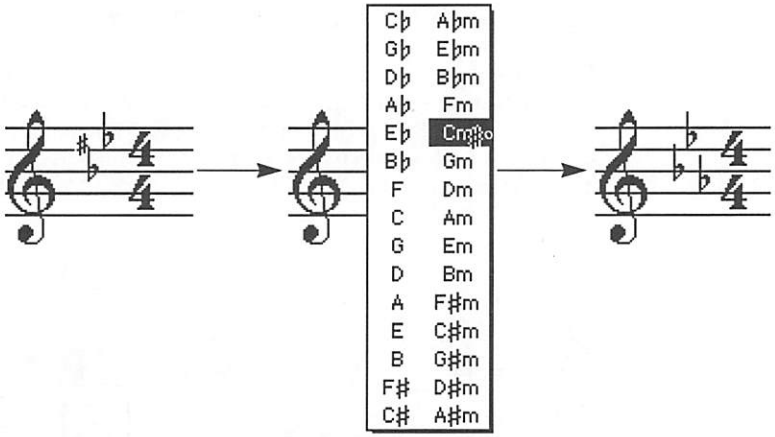
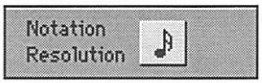


Figure 16.12: Changing the key in a Notation window

❑ Changing Appearance without Changing Data

Notation Resolution



The Notation Resolution pop-up menu allows you to change the quantization level of your notation without changing the way it sounds. For an example of how this works, see "Notation Resolution" on page 91.

Octave Display Area

Under each track in the Notation window, you can change the octave that your performance is displayed in. When you position the cursor in this area, the cursor will change into an "8," and you can edit the octave. See "Shifting the Music by Octaves" on page 104 for more information.

CHAPTER 17: List Windows

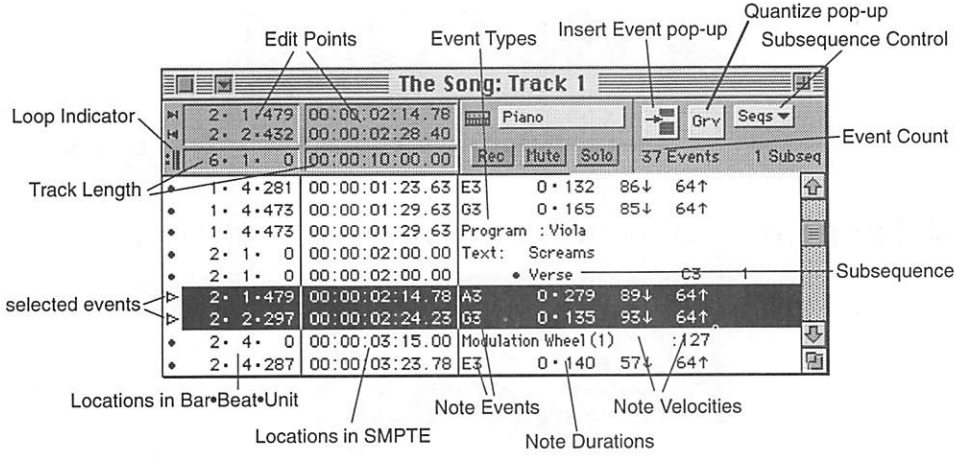


Figure 17.1: The List Window

List windows show you a chronological list of all the events in the track. You can list everything from musical notes to copyright notices, system exclusive data and lyrics. This information is displayed as text and numbers.

List windows are Edit windows. The four Edit windows share some features and tools. If you are can't find the information you're looking for in this chapter, see *Chapter 13: Edit Window Common Features* beginning on page 165.

❑ Three Types of List Windows

There are three types of List windows:

- Tempo Track
- Meter Track
- performance track (normal track)

Performance tracks can contain notes, program changes, text-type events, pitch bend, controllers, aftertouch, poly aftertouch, fader, system exclusive, and subsequence and transpose events.

Meter tracks can contain meter changes, markers, and key signatures.

Tempo tracks can contain only tempo changes.

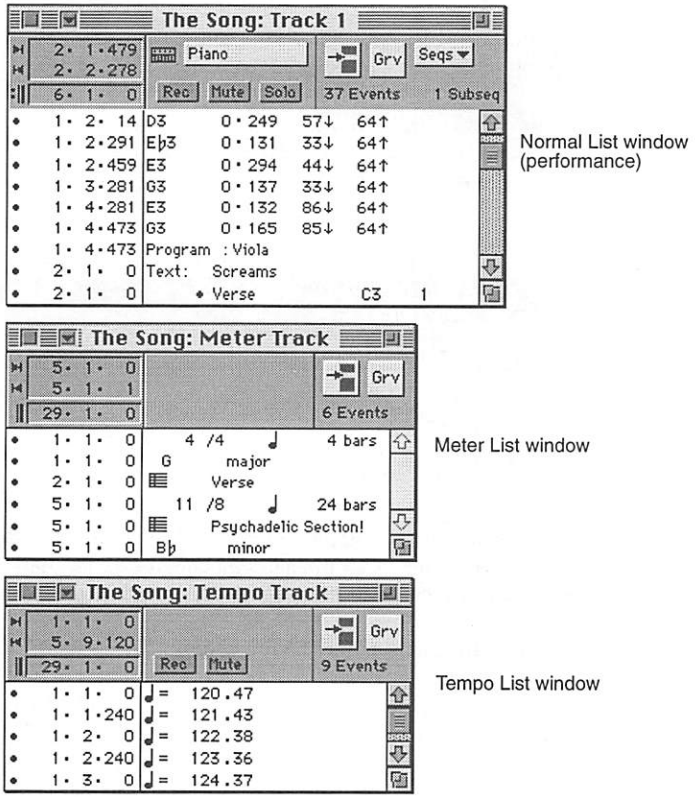


Figure 17.2: The three types of List windows

Choosing What to Display

You can set Vision to display only certain types of items in a List window. This may be helpful when you only want to edit certain types of items, or if you're not using SMPTE time code.

SMPTE Display

You can determine what type of SMPTE to display, or if you don't want to display SMPTE at all. When Vision displays SMPTE, you can see the Edit Point SMPTE locations as well.

To turn off the SMPTE display:

1. **Choose No SMPTE from the Edit Window pop-up.**

Figure 17.3: You can also access this menu from the Do menu.

To turn on the SMPTE display, choose one of the other two SMPTE display options. For an explanation of the different types of SMPTE, see "Counter and SMPTE Display Options" on page 176.

View Filter

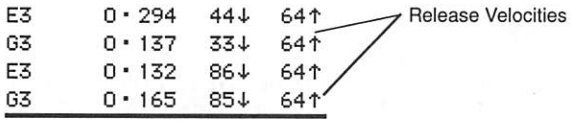
You can use the View dialog to filter items that you don't wish to view in any Edit window—this is especially convenient for List windows.

If you are viewing tracks that have more than one instrument, you can also choose to filter the instruments. You can also open this dialog by choosing **Selected** from the Instruments pop-up.

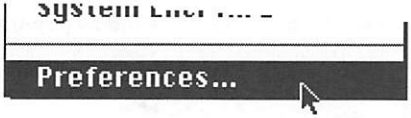
For more information on the View dialog, see "View (option-V)" on page 173.

Release Velocities

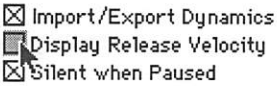
By default, Vision will display release velocities. The attack velocity generally determines the loudness of the note, but the release velocity is not used as often. Many MIDI devices don't respond to release velocities, so you may wish to suppress viewing them:



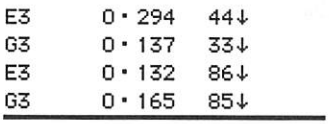
1. **Choose Preferences from the Options menu.**



2. **Uncheck Display Release Velocities.**



3. **Click OK.**



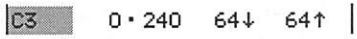
❑ Inserting Events

When you choose an item from this pop-up menu, Vision will insert an event into the track at the Edit In point. There are several types of possible events, depending on the type of List window you are currently in.

After you have set the event type, you can simply click this pop-up to insert the same event type again.

Performance Track List Windows

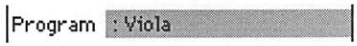
Notes



Note events display the pitch (note number), duration, and velocity (see the previous page for information on suppressing the release velocity).

You can edit the pitch or velocity by highlighting it and playing a new value on your MIDI controller. The duration is displayed as quarter notes and units. You can edit this value by changing it with the mouse and/or Macintosh keyboard.

Programs



Program events will show up as numbers or names. You can change the program by clicking on the program and choosing a new one from the Program pop-up.

Text Type

Text-type events allow you to store text comments, copyright information, descriptions of instruments, lyrics, or cue points in tracks along with your MIDI information. The List window displays as much of the text event as will fit on one line. Text-type events may actually occupy several lines in the Text Edit dialog, but all of the lines are displayed in the List window on one line.

These types include:

- Cue Points

  Typically describe some action taking place on film or video and which occur at a predetermined SMPTE time
- Lyrics

  Words that may be exported to future notation programs or perhaps speech synthesizers
- Instruments

  Verbal descriptions of voicings, so that someone can orchestrate a piece of music in a different MIDI environment than the one in which it was composed
- Copyright

  Provides a place to store a copyright notice in a sequence disk file
- Text

  Can be used for anything at all, such as comments or reminders

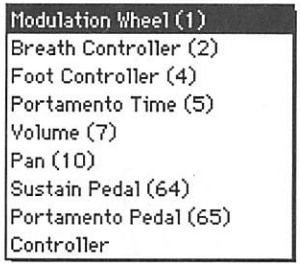
Inserting a new text-type event or clicking on an existing one will open the Text Edit dialog. You can see the entire event and edit it within this box. You can type anything you want. You can cut, copy, and paste text, by typing Command-X, Command-C, and Command-V (you can't choose commands from the **Edit** menu). After you are finished, click **OK** and your changes will be entered in the track.

You can cut or copy markers and merge them into a track—bar markers become Text events, and SMPTE markers become Cue Point events. You can also cut or copy Text and Cue point events and merge them into the Meter track.

Pitch Bend

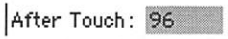
Pitch Bend events show the bend amount as a number between -8192 to +8191.

Controller



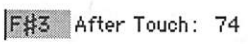
Controller events show the controller number and the value. You can choose the controller type from the submenu shown above. You can edit the controller name by choosing from a pop-up, and you can edit the controller value.

Aftertouch



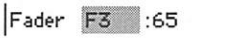
Aftertouch events are displayed as an editable number between 0 and 127.

Poly Aftertouch



Polyphonic Aftertouch events show the pitch and amount of between 127. You can edit the pitch that will be affected by highlighting it and playing a new note on your MIDI controller.

Fader



Fader events show the fader number and the fader value. You can edit either one of these. These events control Vision faders only.

System Exclusive

SysX: F0

When you insert this type of event, the System Exclusive dialog will appear, which allows you to view and edit the Sysex data.

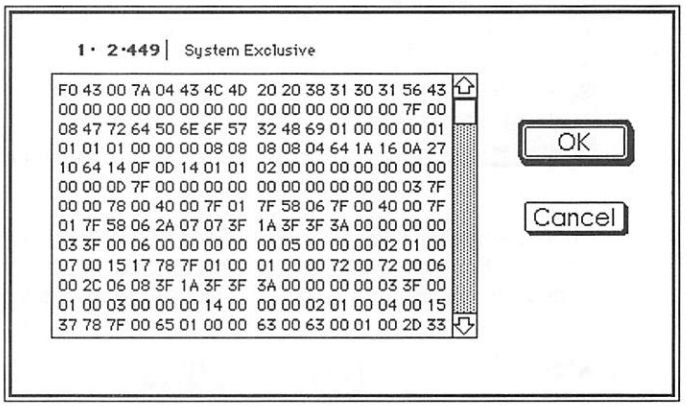


Figure 17.4: System Exclusive Dialog

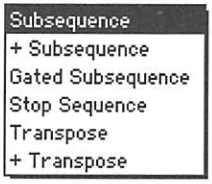
In this dialog, you cannot type invalid hexadecimal characters. You must separate bytes by spaces. Each byte of a system exclusive message consists of two hexadecimal digits (there are sixteen possible hex digits: 0 thru 9, and A through F, which correspond to 10 through 15 respectively).

You can cut, copy, and paste within the System Exclusive Editing dialog box by typing Command X, Command C, and Command V (you can't choose commands from the Edit menu). If you paste text, all non-hexadecimal characters will be removed. After entering or editing your event, click OK. If there are any three-or-more-digit numbers, they will be selected, and the Macintosh will beep. You'll have to correct them before you can exit the dialog. Of course, you can click Cancel to exit without having changed the event.

The system exclusive event will now be displayed in the List window. You can open the editing dialog box again by clicking the sysex event directly in the List window.

For more information about System Exclusive events, see "System Exclusive (Sys Ex)" on page 422.

Subsequence and Transpose



There are six different types of subsequence and transpose events. See "Subsequence Event Types" on page 123 for more information.

Meter Track List Windows

When you are in the List window of a Meter Track, there are three types of events you can insert. Meter changes and key changes will affect every track in the sequence.

Figure 17.5: Insert Pop-up in Meter Track List Window

Inserting Meter Changes in a List Window

Meter change events can only be located at the beginnings of bars. You can edit both the top number and bottom number of the meter, change the rate of the metronome click, and change the number of bars of that meter.

Figure 17.6: Meter Change Event

Inserting Key Changes in a List Window

When you insert a key change, you can edit the key by choosing from a pop-up of available keys. You can toggle between major and minor by clicking the word "major" or "minor."

Figure 17.7: Key Change Event

Inserting Markers in a List Window

There are two types of markers—SMPTE markers and bar markers. When you insert a marker, the default type is bar marker. You can change this to a SMPTE marker by clicking the icon. Click in the name field and type a new name.

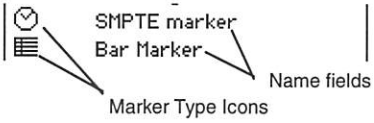


Figure 17.8: Two Different types of Markers

Markers will show up in the Marker pop-up in the Control Bar, and in the ruler of the Track Overview. For more information on the difference between marker types, see page 348. For more information on the Marker pop-up in the Control Bar, see page 156.

Tempo Track List Windows

Figure 17.9: The Insert Event Pop-up in the Tempo Track contains only one item

When you insert a tempo change, it will change the tempo for all tracks of the sequence.

Figure 17.10: Tempo Change Event

❑ Editing Events in a List Window

There are several ways to select events so that you can modify them. You can use the various Select submenu commands in the **Do** menu—or you can select the events directly in an Edit window.

To select an event in a List window, just click on its selector dot at the far left. The selector dot will become an open triangle (which means that the item is selected). The entire event description will also become highlighted.

When you change the bar of an event in the List window, the beat and unit are set to the beginning of the bar. This makes it very easy to enter events at bar or beat locations. If you want to change only one of the numbers (bars, beats, or units) without affecting the others, command-click the number you want to change.

To select a group of adjacent events, click on the first event's selector dot and then drag up or down across all of the events you'd like to select. If you'd like to select a large number of events, you can click on the first event, scroll to the last one, and Shift-click on it. All events between them will also be selected.

If you'd like to select a collection of events which are not adjacent, you can hold the Command key down while clicking on each of the events you'd like to select. The other events between will not be selected.

Clicking on the time or description of an event unselects all events and selects that event.

Event Times and Moving Events

After moving any event in the List window, the window will scroll so as to still display the moved and selected event.

To move an individual event, edit its event time. Click the bar, beat, or unit and type the desired values (or change the numbers with the mouse).

After entering event times, you can click somewhere else or press Enter and the event will move to its new location. The window will scroll to show the new location.

Re-ordering Simultaneous Events

If you have several events that occur at the same time and you would like to change the order in which they occur, simply pick the one you'd like to be last, make it one unit later (press Enter so it actually moves), and then move it one unit earlier. Or, pick the one you'd like to be first, move it one unit earlier, press Enter and then move it one unit later.

Due to MIDI speed limitations, if you have a large number of simultaneous events, they can't all be sent at once. If some notes (drums, for example) are more rhythmically important than other notes (melody notes), move the less important notes a unit or two later in time. At normal tempos, it takes MIDI about one unit of time to send one MIDI event on one serial port, so if you have several simultaneous events, they will already be transmitted over a period of several units. Changing a few events by one or two units will change the "priority," but won't really delay them.

CHAPTER 18: The Instruments Window

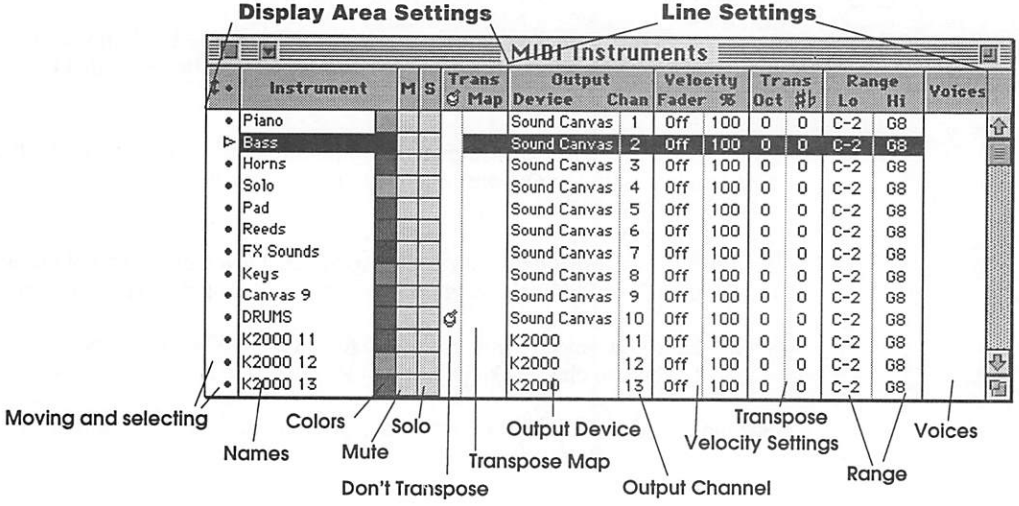

Display Area Settings
Line Settings
MIDI Instruments
Instrument
M S
Trans Map
Output Device Chan
Velocity Fader %
Trans Oct ♯♭
Range Lo Hi
Voices
Piano Sound Canvas 1 Off 100 0 0 C-2 G8
Bass Sound Canvas 2 Off 100 0 0 C-2 G8
Horns Sound Canvas 3 Off 100 0 0 C-2 G8
Solo Sound Canvas 4 Off 100 0 0 C-2 G8
Pad Sound Canvas 5 Off 100 0 0 C-2 G8
Reeds Sound Canvas 6 Off 100 0 0 C-2 G8
FX Sounds Sound Canvas 7 Off 100 0 0 C-2 G8
Keys Sound Canvas 8 Off 100 0 0 C-2 G8
Canvas 9 Sound Canvas 9 Off 100 0 0 C-2 G8
DRUMS Sound Canvas 10 Off 100 0 0 C-2 G8
K2000 11 K2000 11 Off 100 0 0 C-2 G8
K2000 12 K2000 12 Off 100 0 0 C-2 G8
K2000 13 K2000 13 Off 100 0 0 C-2 G8
Moving and selecting
Colors
Names
Mute
Solo
Don't Transpose
Transpose Map
Output Device
Output Channel
Velocity Settings
Transpose
Range
Voices

Figure 18.1: The MIDI Instruments Window

The MIDI information in Vision tracks are not directly assigned to specific MIDI channels. Instead, they are assigned to Vision Instruments, which are in turn assigned to MIDI channels of OMS devices. This output mapping capability has several advantages:

- You can name these Instruments so that you can refer to your devices by name, not by MIDI channel.

- You can layer several MIDI channels on one Instrument so that each note in your sequence plays through several devices.
- Instruments can transpose and scale velocities of notes.
- You can mute & solo instruments.

You will also find the Instruments window useful when you are working with a sequence that contains a lot of subsequences. Rather than making changes to particular tracks within the subsequences, you can make global changes with the Instruments window's parameters.

❑ Instrument Window Display

Moving and Selecting Instruments

To select an instrument, click on the selector dot in the left column of the window. A selected dot will change into a triangle, and the instrument will highlight.

You can select multiple instruments by either dragging or holding down the command or shift key on your Macintosh keyboard while you click selector dots.

To de-select an instrument, either click a different selector dot or hold down the Command or Shift key on your Macintosh and click the selected triangle.

To the left of the selector dots is the Move Column. When the cursor changes into a ↕, you can change the position of the instrument in the window.

For more information (and illustrations) about moving and selecting instruments, see page 6 and page 7.

Instrument Names

The name of each instrument is shown wherever an instrument is referred to—in the Thru Instrument setting, in the Sequence window, in the Graphic and List windows, in the Input Map, and so on. This column is where you name each instrument.

The Instruments are automatically named according to their channels. You can enter your own custom name for an Instrument just by clicking and typing a name. You can revert to the automatic name simply by deleting your custom name.

Mute and Solo

You may mute one or more MIDI Instruments, thereby shutting off notes played using those Instruments.

Similarly, you may solo one or more MIDI Instruments, turning off notes played by any un-soloed Instruments.

Instrument Colors

If your computer and monitor support color, you can assign a different color for each instrument. This way, it is easy to tell them apart when you are viewing many instruments within the same Edit window.

Transpose Maps

There are several transpose capabilities offered by Instruments. The easiest is to set a simple octave or chromatic transposition: since you can do this separately for each layer of a multi-layer Instrument, the settings for this are located in the right half of the Instruments window, and are described below as Line Transpose Octave and Line Transpose Semitone (see page 239).

In addition to this simple transposition, each Instrument can have a transpose map, which allows real-time transpositions. When you click in this column, the Transpose Dialog will appear, which allows you to set up complex tranpositions for your instrument. See "Transpose-T" on page 330 for more information on this dialog.

To clear an Instrument's transpose map, just set up a map that does nothing. The easiest way to do this is to set it to transpose "C major to C major," making sure that Constrain to Scale is not checked.

Creating a Drum Instrument—Don't Transpose!

The Drum Instrument setting prevents notes assigned to that MIDI instrument from being transposed by Transpose Mode or the **Transpose** command. This is important if the instrument contains drum information in which the selection of a key selects a drum sound instead of a pitch (as on most drum machines).

To turn an Instrument into a Drum Instrument (turning on the Don't Transpose mode), move the cursor over the column and click the mouse button—a small picture of a snare drum will appear in the column, showing that Drum Instrument for that line is selected. Click again to make it a normal transposing Instrument (the snare drum will disappear).

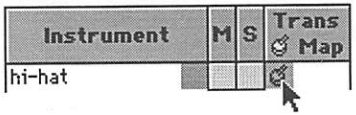


Figure 18.2: Entering "Don't Transpose" for an Instrument

Even if an Instrument is assigned as a Drum Instrument, Vision still uses the Transpose Map. This allows you to use a Transpose Map that transposes one drum machine's drum assignments into another (for example, an RX11 drum machine's key assignments can be mapped into an R-8's key assignments without changing the sequence itself).

Drum Instruments will not allow a note to be retriggered until that note is finished playing.

❑ Instrument Line Settings

The settings to the right of the transpose map pertain only to one line (or layer) and are called the Instrument line settings. To create multi-line instruments, see page 241.

Mode

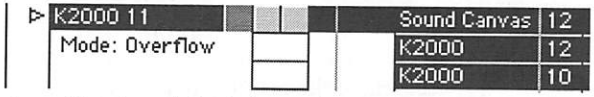


Figure 18.3: A multi-line instrument can have a mode

If an Instrument has more than one line, the Instrument Mode will be shown on the second line, just below the name. The mode can be either **Layered** or **Overflow**. You can click the word to toggle between them.

Layered

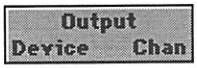
For a Layered Instrument, each line represents a layer. Every MIDI event played by a Layered Instrument is transmitted by the Macintosh on each layer. Each layer might play on a different channel, allowing you to create a large sound by stacking keyboards. Or, one layer might play on the same channel as another, but an octave higher, allowing you to double octaves.

Overflow

An Overflow Instrument can link several synthesizers with a limited number of voices so that they function as a single synthesizer. For each line of an Overflow Instrument, enter the port and MIDI channel and the number of voices that the synthesizer can produce. You can only enter a number of voices when Overflow mode is selected.

Use an Overflow Instrument for Mono Mode voice assignment. To do this, put the desired device and channel in the first line, and set Voices to 1—set Voices in the second line to 0.

Device and Channel



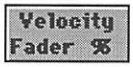
The **device** sets which OMS device is used to transmit events for this Instrument (or for this line). If it is shown in italic text, it's not defined in your current OMS Studio Setup document, and nothing will play. You must click the italic text and choose from the pop-up menu a device that is defined (not in italic text).

The channel sets which MIDI Channel is used to transmit events for the Instrument (or for each line if the Instrument has more than one). The **channels** available are those defined in the OMS Studio Setup document for the selected device. If the channel is shown in italic text, it's not defined in your current OMS Studio Setup document, and nothing will play. You must click the italic text and choose from the pop-up menu a channel that is defined (not in italic text).

Remapping the undefined device channels by clicking the device setting and the channel setting will affect only the current sequence—you'll have to do the same thing in the Instruments window for any sequence you open in the future that used the Instrument corresponding to the undefined device channels.

You can avoid these tedious manual steps each time you open a sequence by using the Undefined Channels dialog box (Setups menu). Remappings will affect all Vision file objects (such as MIDIKeys or Faders) using that particular Input or Output channel, and if you save the remappings, they can affect all sequences you open. See page 364 for more details.

Velocity Fader



Velocity Fade Amount sets the scaling percentage of velocities for the Instrument (or for each line if the Instrument has more than one). It is a numerical which ranges from 1% to 250% of the current velocity amount.

A default value of 100% does not change note velocities during playback. Numbers less than 100% reduce outgoing velocities and numbers greater than 100% increase them. This still affects the velocities even if a fader is controlling them, so you can have several lines controlled by the same fader, each with different scalings. This line is analogous to the "trim" on a mixer.

You can choose one of Vision's 32 faders to control velocity fade for the Instrument (or for each line if the Instrument has more than one). A Fader value of 127 will always equal a velocity value equal to the scaled velocity level. For example, if you have a note recorded at a velocity level of 64 and have Velocity Fade Amount set to 50, then Vision will output that note with a velocity of 32 (50% of 64). If you reset the Velocity Fade Amount to 150, then that note will be output with a velocity level of 96 (150% of 64). This level will always correspond to a fader level of 127 and will always be reduced as the fader is lowered.

Transpose

The left column shows the number of octaves the Instrument (or the line if the Instrument has more than one) is transposed. It may be set to any value from -5 to +5.

The right column sets the number of semitones the Instrument (or the line) is transposed. This may only be between -5 (down a fourth) and +6 (up a tritone). Moving this further than -5 or +6 will spill over into the octave transpose column.

Range (in notes)

The range specifies a range of notes which the Instrument (or the line) will play. Notes outside a line's range will not be played.

❑ Available Instruments

Depending on how you like to work, you can open Instruments from various sources. Vision allows you up to 512 Instruments.

Choosing Instruments from the Windows menu (or typing Option I) opens or selects the Instruments window.

OMS Studio Setup Document Instruments

Each Vision Instrument is associated with a particular device channel. At Vision's initial startup, Vision makes the same number of Instruments as channels on which devices in your OMS Studio Setup document are receiving. These Instruments have the same names as the devices in the OMS Studio Setup document.

You can name Instruments, and you can adjust various parameters of Instruments. Named Instruments are called "custom" Instruments.

Vision Setup File Instruments

You can create new Instruments or delete Instruments that correspond to device channels you don't use.

You can also save these Instruments in the Vision Setup file. Like other Vision file objects you save in a Vision Setup file, these customized Instruments will open when you open a sequence file.

Vision assumes that you want these customized Instruments in the Vision Setup file to take precedence over the automatically generated Instruments made from your Studio Setup document.

Instruments Window Menu

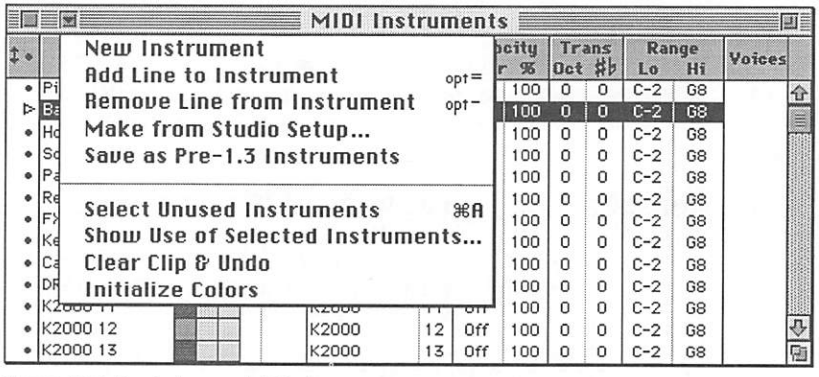


Figure 18.4: The Instruments Window menu

New Instrument

To create a new Instrument:

1. **Click an existing Instrument's selector dot.**
2. **Choose New Instrument from the Instrument window menu.**

A duplicate of the selected Instrument appears at the bottom of the Instrument window (you may have to scroll in order to see it). Rename the new Instrument by clicking the name and typing a new, custom name so you can distinguish the new Instrument from the other Instrument on the same device and channel. Custom Instrument names are displayed in boldface text.

Add Line to Instrument (Option-=)

Adding lines to Instruments allows the Instrument to either play on more than one channel (Layered mode), or to overflow to another device when the first's polyphony is used up (Overflow mode). After you add a line you can toggle to another mode by clicking the name of the mode.

Most Instruments have only one "line," which means that they play through one MIDI channel. You can add lines, each line playing through a different MIDI channel.

See "Creating Custom Instruments" on page 132 for an example of using a multi-line instrument.

You must select an instrument first. Click the desired Instrument's selector dot before you choose **Add Line to Instrument**.

Remove Line from Instrument (Option- —)

Click on any parameter in the line that you want to remove, then select the **Remove Line from Instrument** command to remove the line.

Make from Studio Setup

Making Instruments from the Studio Setup document creates one Instrument for each device channel and, when you're working with an existing Sequence file, keeps additional Instruments only if they're being used by the Sequence. All non-custom Instruments that are unused by the Sequence are removed if they don't correspond to a defined device. Custom Instruments (Instruments you name) are not affected by a Make from Studio Setup procedure and will remain even if they're not used, and even if they don't correspond to a defined device. If you want to be sure not to lose an Instrument, just name it.

Vision automatically makes Instruments from your Studio Setup document the first time you launch the program. Thereafter, whenever your Studio Setup document changes (and if the Always Make from Studio Setup option is checked), Vision will present you with a dialog box offering a chance to make Instruments so that your Instruments window will correspond to your Studio Setup.

You may not want to make Instruments from the Studio Setup document because you will lose all non-custom Instruments that are not used by the current sequence and that don't correspond to a defined device (a device in your Studio Setup document). It doesn't matter where an Instrument comes from—Vision Setup file, existing sequence file, pre-OMS Vision files—unused, undefined Instruments will be removed from the Instruments window after a Make from Studio Setup procedure.

If you don't make Instruments from the Studio Setup document and you have a Vision Setup file that contains Instruments that don't match the Instruments created from your Studio Setup document, you'll need to remap device channels.

Many people find working with Instruments a lot less complicated by never saving Instruments in a Vision Setup file and only saving them with each Sequence file.

Save as Pre-1.3 Instruments

You will only need to use this command if you're working with pre-1.3 Vision sequence files that do not contain Instruments. This means you would have had to uncheck Instruments in the Save dialog box, deliberately not saving Instruments with sequence files (it is not possible to do this in current versions of Vision). In such a scenario as this, in order to play your sequence file you would have had to save Instruments only in a Vision Setup file.

When you open these files with the current version of Vision, however, Vision needs a minimum of 32 Instruments pointing to Printer and Modem ports in order to maintain track references to Instruments. The Save as Pre-1.3 Instruments command allows you to create a set of 64 Instruments that includes Instruments contained in the current sequence file. This is useful if you've customized Instruments and you want to be able to use them with pre-1.3 files. Sixty-four Instruments will be used from the current sequence file—if you have more than 64 Instruments, only the first 64 will be used—if you have less, the last Instrument will be repeated as necessary.

The Instruments will be automatically placed in a file called "Pre-1.3 Instruments," and stored in the same folder as the Vision application—they'll be used whenever you open a pre-1.3 sequence file that doesn't contain Instruments.

Shortcut: If you don't care about making a custom set of pre-1.3 Instruments, you can have Vision automatically make a generic set of pre-1.3 Instruments. Before you start up Vision, just place your pre-1.3 Vision Setup file in the same folder as the Vision application. Vision will notice the old Vision Setup, and automatically create a Pre-1.3 Instruments file.

Select Unused Instruments ⌘-A

Choose this command if you want to quickly see which Instruments are unused so that you can cut or clear them all at once, or so that you can locate used Instruments.

If an Instrument is being used by the current sequence, you won't be able to clear or cut it. You'll probably want to see where it's being used, then you can go to the source and clear it or change it if you want to be able to remove it from the Instruments window.

Show Use of Selected Instruments

You can see where Instruments are being used by selecting them then choosing **Show Use of Selected Instruments**.

Instruments can be used by Tracks, the Thru Instrument, the Metronome, Input Maps, Faders, the Clipboard, or the Undo buffer.

Clear Clip & Undo

Choosing **Clear Clip & Undo** clears the Vision Clipboard and the Undo buffer of any items stored there. This is helpful if you want to remove an Instrument that Vision considers is still being used by the Sequence but is only being temporarily stored following an edit procedure.

NOTE: This is not undoable.

Initialize Colors

This will set the instrument colors to the Vision defaults.

CHAPTER 19: The Quantize Window

The Quantize window contains the parameters for the alignment grid when you execute a quantize command. For complete instructions on quantizing and different ways to quantize, see *Chapter 6: Quantization*.

❑ Quantize Type Pop-up

There are two types of quantization—Grid and Groove.

In the Quantize window, click the Quantize Type pop-up to set the Quantize type to Grid or Groove:

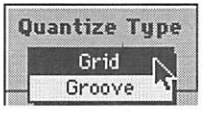


Figure 19.1: Quantize Type Pop-up

The appearance of the Quantize window changes depending on the Quantize type (as shown in Figure 19.2).

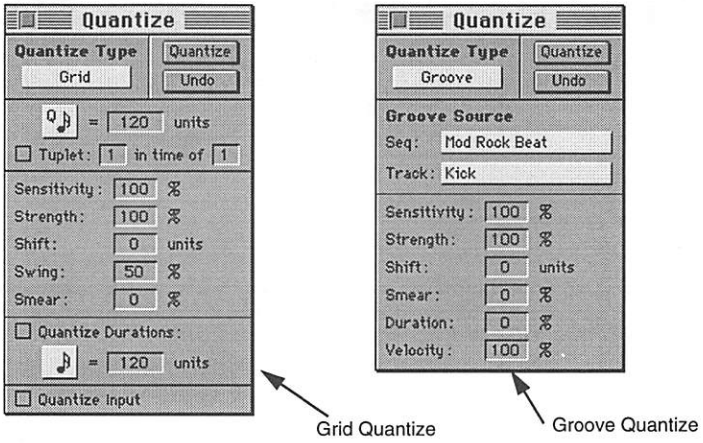


Figure 19.2: The Quantize Window

❑ Common Quantize Window Elements

The two types of Quantize windows share some common elements. These are discussed in the following sections.

Apply Quantize Button

Clicking the Quantize button is exactly like choosing **Quantize** from the **Do** menu (see page 334).

Undo/Redo Button

Clicking the Undo/Redo button is exactly like choosing **Undo** (or **Redo**) from the **Edit** menu (see page 310). It will undo any edit, not just Quantize commands.

Sensitivity

This determines how close a note must be to a grid line in order for Vision to quantize it. With a positive percentage, Vision will change notes that are close to the grid lines, but leave other notes alone. With a negative percentage, Vision will not change notes that are close to the grid—only notes that are farther away from it.

Strength

This determines how much Vision will move a note toward a grid line after it has determined that the note should be quantized. A setting of 100% will align a changed note perfectly with the grid.

Shift

You can add a shift to the notes after you quantize them—a negative shift will move the post-quantized notes earlier in time, while a positive shift will move them slightly later.

Swing

Swing shifts every other grid line in your selection forward or backward in time. A swing of 50% is the same as no swing at all. Raise the swing percentage to add a swing beat.

Smear

Smear adds a bit of randomness (or humanization) to your notes. Smear moves the selected notes slightly backward or forward a few units; each note is moved a different amount. Smearing affects both the length and duration of notes. A value of 0% will not cause any smearing. The maximum number of units a note will be smeared is the value set for the Quantize Resolution. For example, a Quantize Resolution of a quarter note with a 100% smear could result in a note appearing up to an eighth note before or after the quantize point.

❑ Grid Quantize

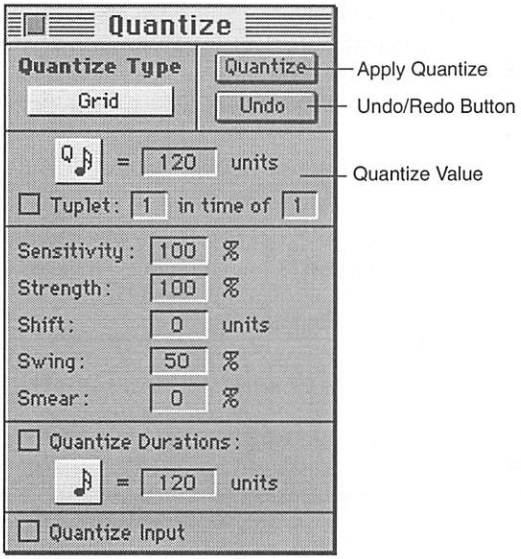
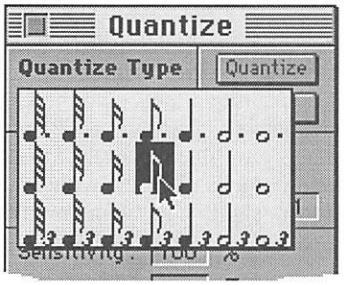


Figure 19.3: The Quantize Window in Grid Mode

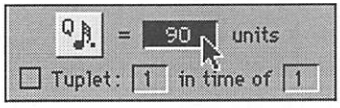
Quantize Value

In this area, you set the size of the grid. There are numerous ways to set the grid size:

- **Choose a note value from the Quantize Value pop-up, or...**



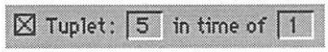
- **Highlight the units field and enter a new value.**



If you enter a value in the units field that is not an equal subdivision of the beat, the Value pop-up will show a ">" or "<" symbol along with the current note size. This will show the approximate value.

Figure 19.4: Approximate Grid Sizes

- **Define the size as a tuplet by clicking the Tuplet checkbox.**
  This means the grid will be based on complex timing divisions, such as 5 notes in the space of one quarter note:



Use the mouse or keyboard to set tuplet fields. Vision will automatically calculate the units.

Quantize Durations

If enabled, the duration of notes will be quantized to the closest multiple of the Quantize Durations amount. This number is also the minimum note size—notes will not be quantized to zero.

The Duration Quantize Amount does not necessarily have any relation to the Quantize Resolution, but the default amount is the same.

Quantize Input

If enabled, Vision will quantize your performance as you record it.

❑ Groove Quantize

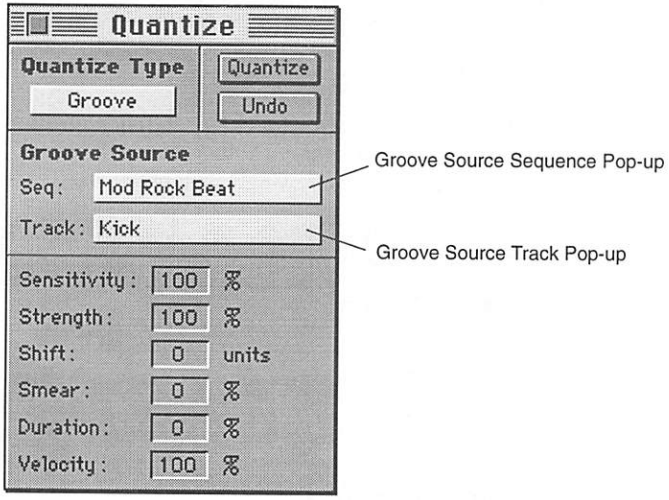


Figure 19.5: The Quantize Window in Groove mode

Groove quantize will quantize your performances based upon the rhythm, velocities and durations of another track rather than using a linear grid to quantize the notes.

Vision gets its dynamic grids for Groove quantize from a track within the "Vision Grooves" file, which is in the same folder as the application (and must remain there). This is a standard Vision sequences file that you can open and edit. All of the tracks in all of the sequences in this file are usable as grooves. You can select which sequence and track to use as the Groove Source from the pop-up **Seq** and **Track** menus.

The **Sensitivity**, **Strength**, **Shift**, and **Smear** parameters work as discussed previously. **Duration** and **Velocity** allow the durations and velocities of the notes in the Groove Source track to influence the quantization. A value of 100% means the velocities or durations come from the Groove Source track; 0% leaves the selected notes' durations and velocities unchanged. Values in between 0% and 100% combine the velocities and durations of both the Groove Source tracks and the track(s) being quantized.

For information about using Groove quantize, see *Chapter 6: Quantization.*

For information about creating or modifying the Vision Grooves file, see "Creating Your Own Grooves" on page 129.

CHAPTER 20: The Names Window

The Names window allows you to name your controllers, programs, and notes. By naming programs, you can select sounds in your synthesizers by *name* and number rather than by number alone. If you use Galaxy™, Opcode's Universal Librarian, Vision can subscribe to names in the Galaxy bundles—when you use Galaxy to load new sounds into your synthesizers, Vision will automatically display the new program names.

In the Names window, there is a line for every channel of every device in your OMS Studio Setup. You can specify a list of program names, a list of note names, and a list of controller names for each channel. Whenever a little icon is shown next to a selector dot, there is a list of names. You can double-click any selector dot to open a window so that you can see and edit the names.

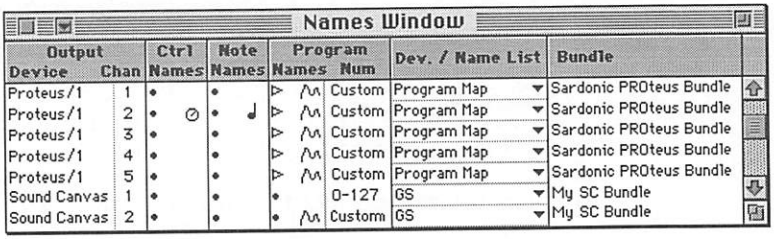
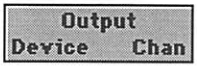

Names Window
Output Device
Chan
Ctrl Names
Note Names
Program Names
Num
Dev. / Name List
Bundle
Proteus/1 1 Custom Program Map Sardonic PROteus Bundle
Proteus/1 2 Custom Program Map Sardonic PROteus Bundle
Proteus/1 3 Custom Program Map Sardonic PROteus Bundle
Proteus/1 4 Custom Program Map Sardonic PROteus Bundle
Proteus/1 5 Custom Program Map Sardonic PROteus Bundle
Sound Canvas 1 0-127 GS My SC Bundle
Sound Canvas 2 Custom GS My SC Bundle

Figure 20.1: The Names Window

❑ Names Window Display



Output Device and Channel

This is the device and channel designation that corresponds to the Program Name list. Vision initially gets these from your OMS Studio Setup document. If they are not defined, they are shown in italics.

Controller Names

This field allows you to enter controller names for the selected channel. Double-click the selector dot to edit controller names for any channel. You only need to enter names for the controllers which are different: whenever there isn't a name list, or isn't a name for some controller, the default name is automatically shown.

You can copy and paste controller name lists to have two devices refer to the same list of names. If you want to make a separate name list based on the original, use the **Clone** command instead (see page 317).

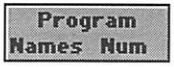
If you are using controller names, this field will show a ⊘.

Note Names

If you are using a program that has different sounds assigned to each note, such as a drum set program, you may find it useful to assign a different name to each note. Double-click the selector dot to edit note names for any channel.

You can copy and paste note name lists to have two devices refer to the same list of names. If you want to make a separate name list based on the original, use the **Clone** command instead (see page 317).

If you are using note names, this field will show a ♩.



Program Names and Numbers

You can select program name lists by clicking the selector dot. You can copy and paste program name lists to have two devices refer to the same list of names. If you want to make a separate name list based on the original, use the **Clone** command instead (see page 317).

The number field allows you to choose the numbering scheme for this device. For example, many synths number programs from 0-127, while many Yamahas use 1-128. Roland modules generally use a 11-88 numbering scheme. You can choose one of these schemes, or create your own. You cannot change the program numbering scheme for a channel which subscribes to a name list—it is automatically set by Galaxy.

You can also set the numbering scheme for a selected device by choosing a number scheme from the Names window pop-up. Double-click the selector dot to enter your own names or custom numberings.

If you are using program names, this field will show a ∿.

Name Lists

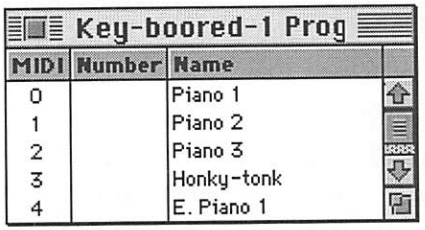


Figure 20.2: Name Lists

You can edit the names of your programs from this window.

Device/Name Lists

This field lets you identify the patch type to get names for a MIDI device that listens on this MIDI channel. If you are using Galaxy, a pop-up menu showing the patch types for the device on this channel will appear when you click on the triangle. The pop-up will list all patch types installed into Galaxy if the device is one that Galaxy is unaware of. Use the pop-up to identify which name list each channel should use when you paste names from a bundle, or when the device channel subscribes to a bundle.

If you are not using Galaxy, or if you don't have a Galaxy module for the device on this channel, choose (none) from the pop-up, and type any name you want to describe the channel. This name will be the automatic name for any Instrument which is assigned to this channel.

Bundle Bundles

If a channel subscribes to a Galaxy bundle, this field shows the name of the bundle.

❑ Names Files

Vision stores the contents of the Names window in Names files—not in Sequence files. Controller names, Program names, and Note names are stored in these files, and the files are then linked to each sequence file.

When Vision opens a Sequence file, it will also open the associated Names file. Many sequence files can refer to the same Names file. This saves disk space because it's likely that you will frequently use the same Names information, and it would take a lot of space to store that information in each sequence file.

To open or save a new names file:

1. **Make sure the Names window is open and active.**
   One way to accomplish this is to choose **Names** from the **Windows** menu.
2. **Choose Open, Save, or Save As from the File menu.**
   Vision will now open and save names files.

❑ Names Window Menu

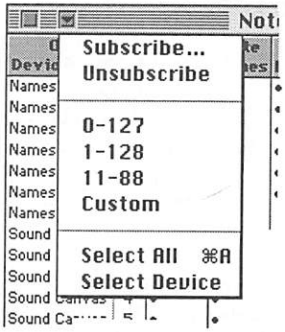


Figure 20.3: Names Window Menu

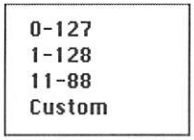
Subscribe

Choosing this opens a dialog where you choose a bundle from Opcode's Galaxy™ librarian to subscribe to. Subscribing extracts patch names from the published bundle and places them in a Program Names list so that patches may be referred to by name. Subscribing creates a dynamic link to the published bundle and changes made in Galaxy will be reflected in Vision.

Unsubscribe

Choosing this cancels the subscription of a Galaxy™ bundle and clears the Program Name lists on the selected device channels.

Program Numbers



Choose one of these menu items to set the numbering scheme for the selected device.

These are the numbering schemes for the programs on most synthesizers. If you use another scheme, Choose **Custom.** See page 254 for an explanation of these names.

Select All ⌘-A

This will select all of the programs in the window.

Select Device

This command selects all of the remaining channels for a device if one of the channels is selected. If nothing is selected, all of the channels for the first device will be selected.

CHAPTER 21: The Input Map Window

The Input Map window allows you to assign any MIDI event received from any MIDI device and channel to a different instrument. You can also trigger sequence playback.

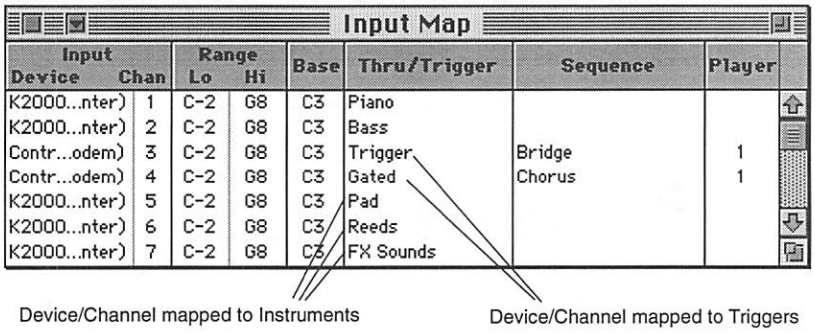
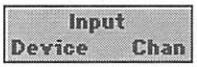


Figure 21.1: The Input Map Window

❑ Input Map Display

Each line in the Input Map maps a range of notes on a MIDI device and channel to an Instrument (or a trigger mode). When Vision receives a MIDI signal, it is compared with each line in the Input Map, beginning with the top line. If it is in the specified range of notes (or if it's not a note) and it's on the specified device and channel, then the MIDI event is assigned to that line's Instrument. Vision checks each line for a match—if more than one line matches, the first one is used. If no line matches, the event is routed to the Thru Instrument in the Control Bar.



Input Device and Channel

Select the MIDI device and channel you want to assign. Vision will intercept MIDI signals from this device and channel, and map the signal to the instrument or trigger you define in the other areas of this window.

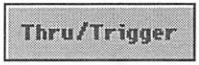
The devices available here are determined by the input devices defined in your current OMS Studio Setup document.

Range

These columns let you specify the range of notes which this line matches. You can enter the MIDI note number from the Macintosh numeric keypad or by selecting it and playing a note on your controller keyboard.

Base

The base is the note that acts as Middle C for a particular keyboard zone. If it says C2, for example, each note is transposed down an octave before being recorded or "sent thru" — C3 is transposed so it becomes C2, D3 becomes D2, etc. (Note that Middle C can be either C3 or C4, depending upon what you have selected in the **Preferences** dialog box in the **Options** menu—see page 376).

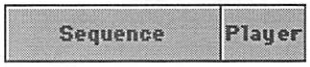


Thru/Trigger

Clicking here gives you the same Instrument pop-up as the Thru Instrument pop-up in the Control bar (see page 144). You can choose either an Instrument to assign to this line's zone, or you can choose a trigger or transpose mode.

If you want to assign a trigger mode, you can then set the sequence and player. This is discussed below and in "Trigger and Transpose Modes" on page 261.

Sequence and Player



If you choose a Trigger Mode for a line, these fields let you enter both the sequence which is played and the Player it's played on.

Unlike the Thru Instrument setting, where the trigger mode requires you to hit a letter key to make a sequence triggerable, Vision will start a sequence when it receives a MIDI signal from the device and channel in this line.

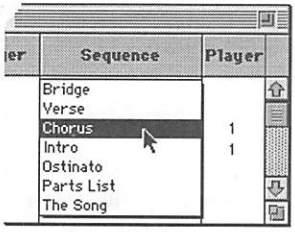


Figure 21.2: Choosing a Sequence to trigger

For more information on Players, see *Chapter 24: Players & Queue*.

❑ Trigger and Transpose Modes

Transpose Mode

Transpose Mode causes any key to transpose all sequences which are already playing (except if you're recording—it won't transpose the one you're recording).

Set Transpose Mode by choosing it from the Thru Instrument pop-up menu or by typing Command-Option-T. You can set it first and then start a sequence playing, or you can set it while a sequence is playing. After setting it, all notes you play (that aren't MIDIKeys and aren't mapped elsewhere by the Input Map) will not be echoed—they will transpose the sequence as you play back. If you play two or more keys simultaneously, you will multiply the number of notes being played: playing two keys an octave apart will make the sequences play back in octaves.

Transpose Mode is temporary when chosen from the Thru Instrument pop-up menu. It will automatically be turned off when the sequence is stopped. Using the Input Map, you may assign a zone on your keyboard to be in Transpose Mode at all times.

Trigger Modes

The Trigger Modes cause any key to trigger one or more sequences—each key you press starts one copy of each sequence. The sequence is transposed according to what key you press—if you play several notes simultaneously, you will get several transposed copies of the sequence playing simultaneously.

Trigger Mode

If you choose Trigger Mode, every time you play an individual note, the sequence will stop and restart, transposed to the new note. If you play notes simultaneously, each one will start a simultaneous copy of the sequence.

Continuous Trigger Mode

With Continuous Trigger Mode, playing new notes won't stop old sequences—they will play throughout their entire length. You'll probably only want to use this mode with short sequences.

Gated Mode

If you choose Gated Mode, each sequence will only play for as long as you hold the key down. You could record a "trill" or "arpeggio" sequence, and the entire keyboard would trill or arpeggiate whenever you play it.

Trigger Mode is temporary when chosen from the Thru Instrument pop-up menu in the Control Bar. It will automatically be turned off when the sequence is stopped. Using the Input Map, you can assign a zone on your keyboard to be in Trigger Mode at all times.

When to Use an Input Map

For normal use of Vision with a single controller keyboard, you do not need an Input Map. Here are some times when you might want to use an Input Map:

- You have more than one controller keyboard in your OMS Studio Setup..
- You want to assign keys on a MIDI keyboard to permanently trigger certain sequences (see "Trigger and Transpose Modes" on page 261).
- You are recording from another sequencer.
- You want to split your controller keyboard.

Unless you are doing something similar to these tasks, it is probably a good idea to choose **Clear All** from the Input Map window pop-up (page 265).

Multi Channel Recording

If you are recording from a separate sequencer into Vision and you would like to record several separate MIDI channels at the same time, use the Input Map to assign each MIDI channel to a MIDI Instrument in Vision.

Multiple Keyboards and Keyboard Splits

To set up a split controller keyboard, first make sure that the Input Map is clear by choosing Clear All. Then, for each zone on the keyboard:

1. **Choose Add Line from the Input Map pop-up.**
2. **Make sure the Input device and channel assignments match those on which the keyboard is transmitting.**
3. **Click on the low range note in the new line, and play the low note of the range on the keyboard.**
4. **Click on the high range note (or type the right arrow key), and play the high note of the range.**

❑ Input Map Window Menu

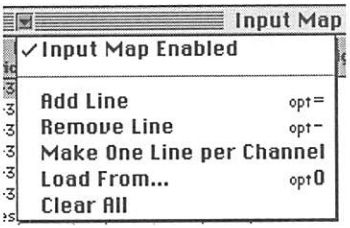


Figure 21.3: Input Map Menu

Input Map Enabled

This item is a toggle. When it is enabled, Vision will route received MIDI signals to the Input Map. When it is disabled, Vision will not route received MIDI signals to the Input Map, but directly to the Thru Instrument.

Add Line (Option-=)

This creates a new line in the Input Map. If you select something on an existing line before choosing **Add Line**, that line will be duplicated just below the selected one.

Remove Line (Option-—)

To remove a line from the Input Map, select any parameter on the line you want to remove. Then, choose **Remove Line**.

Make One Line per Channel

Choose this command to set up one Thru/Trigger Instrument for each enabled MIDI Input. Instruments are in the same order as in the Instruments window.

SHORTCUT: If you want lines for only one device, choose **Enable Input Devices** from the Setups menu, enable only the device you want to create an Input Map for, then choose **Make One Line per Channel**. After this, you can set the Enable Input Devices setting back the way it was.

Load From

This will open a standard open dialog, where you can load only the Input Map from another Vision file.

This will load only the Input Map from the Vision file, without having to open a file to manually extract the Input Map from it. This way you can create standard templates of Input Maps that you'll be able to recall for future use.

Clear All

The **Clear All** command deletes all lines from the Input Map. If you are not doing multi channel recording or using a split keyboard, you should keep your Input Map clear, so that your controller keyboard can use the Thru Instrument setting (which you can change more easily than the Input Map).

This command completely replaces whatever you might have had in the Input Map and it is not undoable.

CHAPTER 22: The MIDIKeys Window

MIDIKeys allow you to assign events from a MIDI controller to trigger nearly any Macintosh key combination. This is particularly useful for controlling Vision right from your instrument (without using the Macintosh keyboard). The left side of the window shows a list of MIDI events, and the right side of the window displays the corresponding Macintosh key equivalents to which the event is assigned.

In addition, there are four special MIDIKey functions that you can assign to any MIDI event.

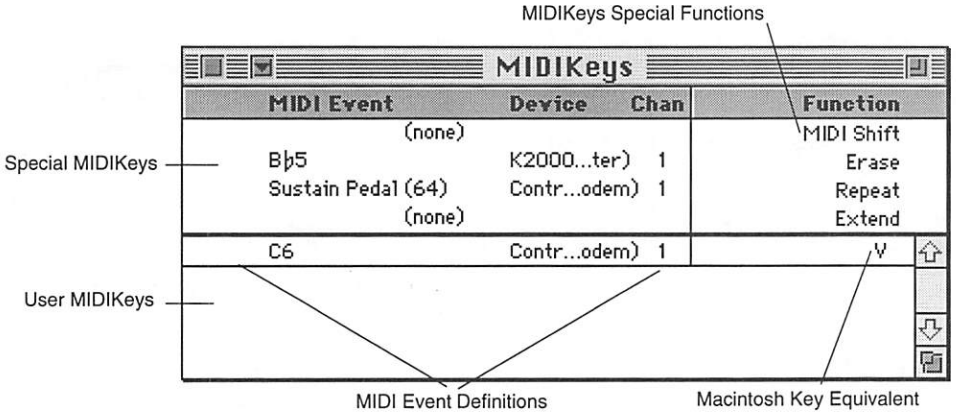


Figure 22.1: The MIDIKeys Window

Special MIDIKeys

The four special MIDIKey functions allow you to perform different actions when MIDIKeys is enabled. You can assign each one of these functions to a different MIDI event.

MIDIShift

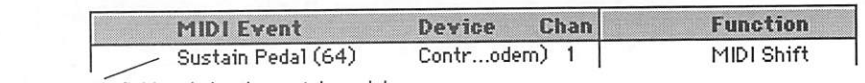
Like the SHIFT key on your Macintosh, the MIDIShift function allows Vision to interpret a MIDI event as a MIDIKey only while another MIDI note or pedal is held down.

Vision must receive both MIDI events for the corresponding key combination to be invoked.

For example, you can set up MIDIKeys to type a TAB whenever you play G3 (this will start Vision recording).

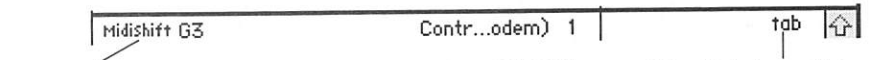
But this will start recording even if you don't want to—and there are plenty of times you will want to play G3 without starting to record. So, if you assign the MIDIShift to another special function, say a pedal you don't often use, or another input device, then Vision will only start recording when it receives the G3 when the pedal is already down.

You can assign the MIDIShift event by clicking the MIDIShift event field and playing the event you want to define as MIDIShift.



Highlight this field and play the sustain pedal

Now, simply play this MIDI event with another when you define the new MIDIKey (see also "Making Your Own MIDIKeys" on page 270).



Play G3 while holding down the sustain pedal to assign a MIDIShift

This will start recording

You can redefine the MIDIShift, and any MIDIKeys that use MIDIShift will respond to it—you don't need to redefine them.

Erase

Use the Erase MIDIKey to erase notes in the record track during playback or record. The track must be enabled for recording.

To define an Erase MIDIKey, click to the left of Erase, and play a note or a pedal, which will be displayed as the Erase key.

Any time you press the Erase MIDIKey note/pedal any other notes you hold down will be erased as they play.

See "Advanced Loop Recording—Drum Machine Style" on page 38 for more information on using the Erase MIDIKey.

Repeat

The Repeat MIDIKey allows you to record in typical drum-machine style. As long as you hold down the note you defined as the repeat MIDIKey, any other note you also hold down will repeat, at a rate set by the Grid Quantize settings.

With loop recording enabled in the Control bar, you can build on your pattern, drum machine-style. With an Erase MIDIKey defined, you can erase wrong notes when you hear them play back on subsequent loops. Remember, you can set the In and Out Points of the loop anywhere in the track.

See "Advanced Loop Recording—Drum Machine Style" on page 38 for more information on using the Repeat MIDIKey.

Extend

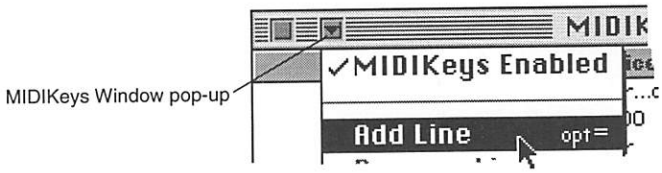
This MIDIKey performs the same function as a sustain pedal, but without those pesky sustain pedal events (ever accidentally delete a Sustain Pedal Off event?) Normally, you'd map your sustain pedal to it. This can be very useful when you're loop recording. The advantage is that instead of recording sustain pedal data and having to edit that, using **Extend** will simply extend note durations for much easier editing.

You define an Extend MIDIKey by clicking to the left of Extend and pressing your sustain pedal (or any other key or pedal).

❑ Making Your Own MIDIKeys

To create your own MIDIKey:

1. **Choose Add Line from the MIDIKeys Window pop-up.**
   You can also type option-=.



2. **Highlight the MIDI definition field and play the MIDI event you want to assign to the Macintosh key combination.**
   The MIDI field shows the event type, device, and MIDI channel that will trigger the Macintosh key combination.

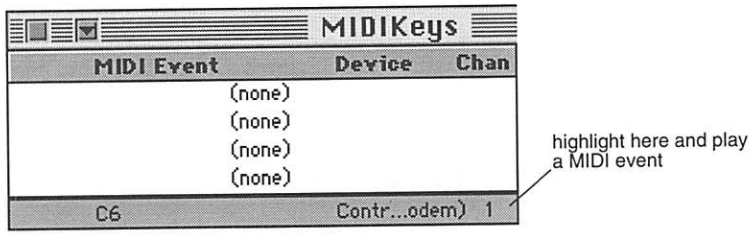


Figure 22.2: Set the MIDI Event Information

3. **Highlight the function field and type the key combination you want to invoke with the MIDI event you just played.**

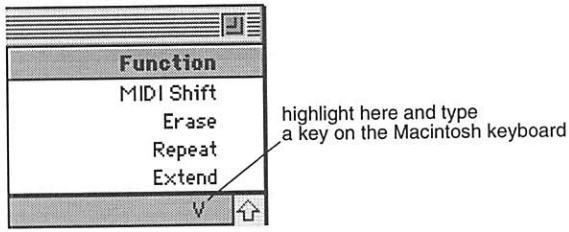


Figure 22.3: Set the Key combination

You can set a MIDIKey to any Macintosh key combination. You can also assign a MIDIKey to play any sequence—simply define the MIDIKey to the same key you assigned in the Sequences window key assignment (see page 162).

For a list of Vision keyboard equivalents, consult the Quick Reference card in your Vision package, or see "Using the Macintosh Keyboard" on page 22.

MIDIKeys only work in Vision. You cannot assign a MIDIKey to work in other Macintosh programs, even if Vision is not the active application. However, MIDIKeys will still control Vision when it's running in the background (unless you're using "Allow Non-OMS Applications" compatibility mode).

❑ Erasing MIDI Keys

Removing a MIDIKey Definition from a Pre-set MIDIKey

You cannot remove the four pre-set MIDIKeys. When a MIDIKey has no MIDI event definition, nothing will trigger the corresponding function. To cancel the definition of the MIDIKey:

1. **Highlight the MIDI event definition.**
2. **Type the delete key (sometimes called "backspace") on your Macintosh keyboard.**

An undefined MIDIKey will have the words "(none)" in the MIDI event definition field.

MIDI Event	Device	Chan
(none)		
(none)		
(none)		
(none)		

Figure 22.4: Undefined MIDIKeys

Removing MIDIKeys from the List

To remove a MIDIKey completely from the list:

1. **Highlight the MIDI event definition.**
2. **Choose Remove Line from the MIDIKeys window pop-up.**
   You can also type Command-minus (-).

❑ Storing MIDIKeys

MIDIKeys can be stored with the sequences file—every time you open a set of sequences, you will also open the corresponding MIDIKeys if they're saved with the sequence file.

If you want to save the a group of MIDIKeys that you will use as a default, you can choose **Save as Setup** from the **File** menu (this will also save all current Instruments, Fader assignments, and Input Map settings as a default).

This will store the current MIDIKeys in your Vision Setup document, and any time you create a new Vision document, it will use these MIDIKeys.

You can also use the Load From command in the MIDIKeys window pop-up to get MIDIKeys from another Vision file. See page 273 for details.

❑ MIDIKeys Window Menu

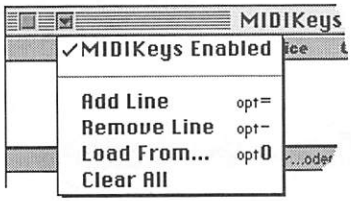


Figure 22.5: MIDIKeys Window Menu

MIDIKeys Enabled

This item is a toggle. When it is enabled, Vision will route received MIDI signals to MIDIKeys—if the MIDI signal is defined as a MIDIKey, the Macintosh key combination is played.

When it is disabled, Vision will not route received MIDI signals to the Input Map, but directly to the Thru Instrument.

Add Line (Option-=)

This creates a new MIDIKey that you can then define.

Remove Line (Option-—)

This removes the selected MIDIKey from the menu. You cannot remove the four special MIDIKeys, but you can remove their MIDI event definitions—see page 271 for details.

Load From

This will open a standard open dialog, where you can load only the MIDIKeys from another Vision file.

This will load only the MIDIKeys from the Vision file, without having to open a file to manually extract the MIDIKeys from it. This way you can create standard templates of MIDIKeys that you'll be able to recall for future use.

Clear All

The **Clear All** command deletes all user MIDIKeys from the MIDIKeys window, and clears all MIDI definitions in the four special functions.

CHAPTER 23: The Faders Window

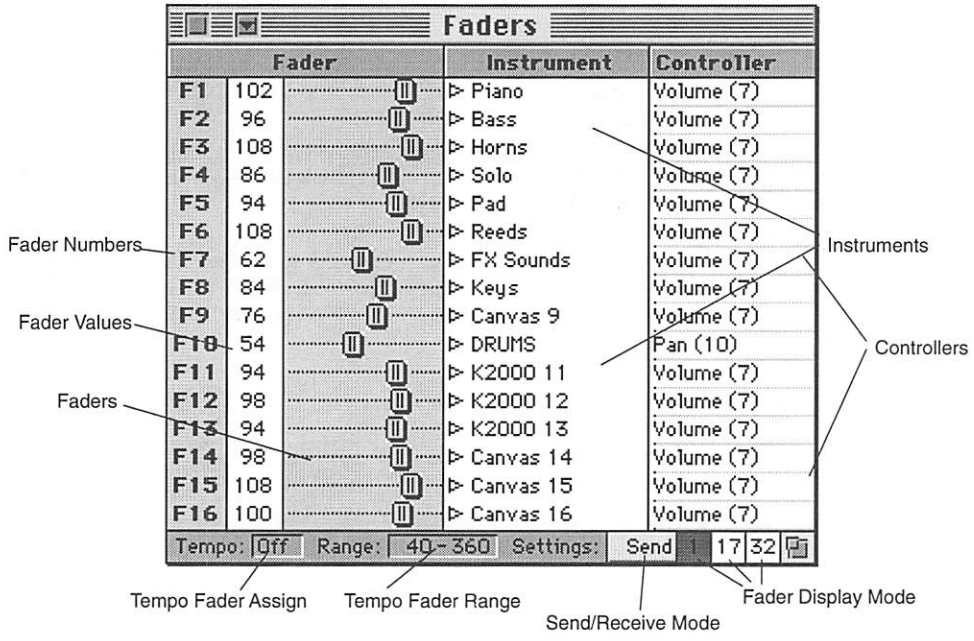


Figure 23.1: The Faders Window

About Faders

Vision supports up to 32 faders. You can set each fader to send any MIDI controller (other than pitch bend or aftertouch) or perform a velocity fade on any Instrument. One fader can be set to control the tempo.

You can change each fader directly with the mouse (or keyboard) or an external MIDI controller. You can also group Faders so that you can control several of them with the same external MIDI controller.

Faders can be displayed in a single column (beginning with either Fader 1 or Fader 17), or in two columns.

Fader movement is completely automated. Simply move a fader while Vision is recording and, when you play back the sequence with the Faders window open, you'll see the faders moving back and forth to the recorded values.

When you move a fader during recording, the fader movement is recorded as one or multiple fader events. These events can be edited in either a List window or in the Strip Chart. Fader events can also be selected for editing in the Select dialog box of the Do menu.

Fader events are automatically converted to the appropriate controller event when you export your MIDI files.

At the bottom of the Faders window is a toggle that controls whether the window displays either (1) what the faders are sending, or (2) what external controllers they are controlled by (the Receive settings).

❑ Fader Window Display Area

Fader Values

This field shows the numerical value for the fader in the same row. Clicking on the fader value numerical and sliding the mouse up and down lets you set the fader value precisely to any value. You can also type in a value for this numerical from the Macintosh keyboard.

Fader Sliders

You can drag these to change the fader value. Faders that are controlled by external devices will move onscreen to follow the controller input. To change the value of a fader, you can drag this slider. Dragging the slider lets you set the fader to even-numbered values (and 127).

Instruments or Device /Channel and Controller

When the Faders window shows the Send settings, the Instrument shows where the Fader is sending controller messages. The Controller Number field shows which Controller the Fader is sending.

When the Receive settings are shown, the Device pop-up allows you to select what device the fader is being controlled by, and the Channel number shows what channel. The Controller Number field shows which controller controls the fader.

Tempo Fader Assign

You can set one fader to control the tempo. See "Using a Fader to Record Tempo Changes" on page 43 for more information on this.

Tempo Fader Range

You can set the minimum and maximum tempos that the tempo fader will produce.

Send/Receive Settings Display

Click this toggle to set the Faders window to display the send or receive settings.

Send Settings

Each fader can be used to send a MIDI controller to a selected Instrument:

1. **Click the Send/Receive toggle so it reads "Send".**
2. **Activate the fader you want to use by clicking on its selector dot.**
3. **Select an Instrument by clicking its name and choosing from the pop-up menu.**
4. **Select a controller by clicking on the triangle to the far right and choosing one from the pop-up menu.**

   (Volume (7) is the default that is displayed initially) Only actual MIDI controllers may be selected: pitch bend and aftertouch are not available.

Whenever you move this fader, the corresponding MIDI controller will be sent on the selected Instrument.

Fader movements will be recorded. If you move a fader while you are recording, Vision will record fader events in the record-enabled track.

One controller can control volume on several MIDI channels by setting up a special Instrument with several layers (each set to one of the desired MIDI channels) and then selecting that Instrument to send volume on.

You can record an automated mixdown by using controller #7, however, not all MIDI synthesizers (particularly older models) respond to controller #7. You may be able to do a pseudo volume mix by using faders to control Instrument Velocities. This is explained later in this chapter. See "Fader Functions" on page 280.

Receive Settings

To control a fader with an external MIDI controller such as a modulation wheel, MIDI fader unit or continuous pedal, check **Fader Rcv Enabled** in the Faders Window pop-up menu. This will enable the faders to receive information from external MIDI controllers.

Figure 23.2: Enabling Fader Receive

To set up the controller for each fader:

1. **Click on the Send/Receive toggle so it reads "Receive."**
2. **Enable external control of the Fader by clicking on its selector dot.**
   A field will be displayed showing the port, channel and controller number which will provide external control to that fader.
3. **You may set each numerical using any of Vision's standard procedures, but it's easier to click on any one of them and then "nudge" the external MIDI controller that is to control that fader.**

Once set, an external MIDI controller will move the fader (or faders) to which it is assigned. These faders will, in turn, control whichever MIDI Controller is assigned to it in the Send Fader mode, or control velocity or tempo.

Fader Display Mode

The Faders window allows you to view faders in one of three different ways by clicking the 1, 17 or 32 controls in the bottom right corner of the window. If you click on "1," you'll display faders in one column beginning with Fader 1. If you click on "17," you'll display faders in one column beginning with Fader 17. If you click on "32", you'll display faders in two columns—the first column beginning with Fader 1 and the second column beginning with Fader 17.

❑ Fader Functions

Using Faders to Re-Map MIDI Controllers

You can use a fader to re-map a MIDI controller by picking one controller to control the Fader (using the Rcv setting) and picking another which is to be sent (using the Send setting).

Using Faders to Control Instrument Velocities

Not all MIDI synthesizers (particularly older models) respond to MIDI Volume (controller #7). Vision, however, allows you to do a pseudo volume mix by using faders to control Instrument velocities. Since velocity can be programmed to control amplitude on most synthesizers (see your synthesizer manual), varying a note's velocity will vary the output level of the synthesizer.

Each Instrument layer may modify the velocities of the notes it plays. There are two columns in the Instruments window called Velocity Fade Fader and Velocity Fade Amount. You can set Velocity Fade Fader to any of Vision's 32 faders (or to Off). You can set the Velocity Fade Amount range from 1% to 250%. These settings will affect all note velocities played by that Instrument layer.

For example, if you have a note recorded at a velocity level of 64 and have Velocity Fade Amount set to 50, then Vision will set fader level 127 equal to a velocity of 32 (50% of 64). It's important to remember that at a fader's maximum level (127), the velocity output will always be the recorded velocity multiplied by the scaling factor (as set in the Velocity Fade Amount column of the Instruments window).

Make sure that (within the Faders window) you have deselected any faders that are assigned to control only Instrument velocities. Moving the fader while the sequence is playing will change the attack velocity of notes assigned to that Instrument. Fader movements can now be recorded and used as pseudo volume controllers for MIDI instruments which do not support controller #7.

Copying Faders (take a "snapshot" of fader values)

When the Fader window is active, you can choose **Copy Faders** from the **Edit** menu. This will place fader events for each defined fader's current value onto the Clipboard. You can then paste the fader events into a track, effectively creating a "snapshot" of the current fader values.

CHAPTER 24: Players & Queue

This window displays the sequences that are playing, and the sequences that are waiting to play.

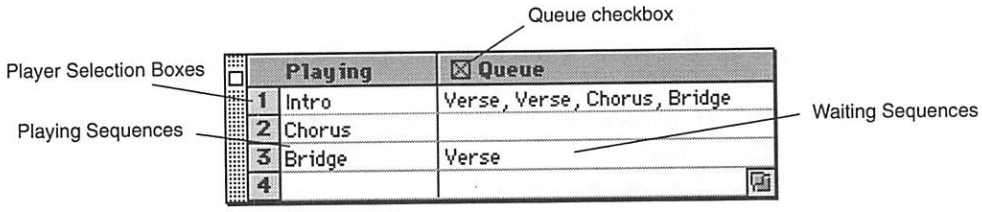


Figure 24.1: The Players Window

❑ Queue Mode ☒ Queue

Vision allows you to assign each sequence to a Macintosh key (see "Sequence Key Assignments" on page 162). When you type a key, Vision will start playing that sequence. So, what happens if a sequence is playing and you type another sequence key?

If **Queue mode is disabled** (unchecked), Vision will stop the current sequence and start playing the new one.

If **Queue mode is enabled** (checked), Vision will play the current sequence until it is finished playing, then start playing the next sequence.

You can queue up to 16 sequences. This queue of sequences comprises one "Player." This is useful for auditioning different arrangements of your sequences.

❑ Players

Vision's Players are a way to play sequences simultaneously. Vision allows you up to 9 Players, therefore, you can have 9 sequences play simultaneously. Each player is like an individual sequencer, able to play a sequence regardless of what other players are doing.

A Player can contain one sequence, or it can contain up to 16 sequences if you've used Queue mode to queue sequences into that player.

Each one of the nine players has its own queue—in Queue mode, each of the sequence letters you type goes into the queue of the current Player.

The currently selected Player is the Player into which you're queuing sequences when you're in Queue mode. By default, Player 1 is selected unless you select a different Player.

If the Players & Queue window is open, and you have resized it so that there is more than one Player showing, typing a number on the Macintosh keyboard will make that Player current.

To queue multiple sequences in a player:

1. **If it isn't already checked, enable the Queue checkbox.**
2. **Make a Player current by clicking its selection box**
   You can also type the number of that Player.
3. **Type the sequence key equivalent(s) that you would like to assign to that player.**
4. **If you want to have sequences play simultaneously, you can click another Player selection box and type another sequence.**

Playing in Time

If you want Vision's Players to start "on the beat" instead of starting when you type the sequence letter, set the sequence's Sync mode to Start in the Sequence window before you type the sequence letter. See "Sync Mode" on page 188 for more information on sequence sync modes.

CHAPTER 25: The Note Size Window

The Note Size window is where you define the notes you will individually enter or record. The title of the window is the name of the action you are performing:

- The Step Record window
- The Insert Notes window
- The Place Record window (this is the name of the window if you use it with MIDI Machine Control)

The title of the window is the name of the action you are performing.

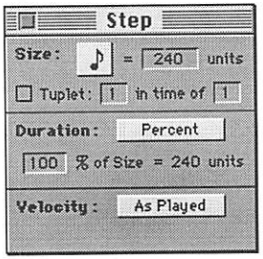


Figure 25.1: Step Record Window

There are three areas of this window: Size, Duration, and Velocity (or Insert). Set the parameters in each area to define the duration and velocity of the note you will record. The pitch of the note is determined by the note you play on your MIDI controller or where you click; everything else can be defined in this window.

❑ Opening the Note Size Window

The Note Size window will open when you are performing a task that requires you to define notes to be recorded individually. The three Note Size windows are not in the Windows menu:

Step Record Window

When you are using either Step Replace or Step Overdub record mode, the Step Record window will appear when you click the Record button on the Control bar. For instructions on step recording, see "Step Recording Basics" on page 32.

Insert Notes Window

The Insert Notes window will open when you double-click the pencil tool in an edit window. For more information on inserting notes this way, see "Inserting Notes" on page 34.

Place Record Window

The Place Record window will open if you are using MIDI Machine Control and you want to enter a MIDI event at a specific time code location. This is similar to step recording—click the Record button while you are using MMC. For more information, see *Appendix A: AV Controls for MIDI Machine Control* on page 387.

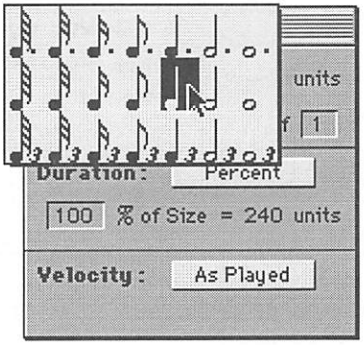
❑ Size Parameter

When step recording, this is the amount of time the counter will advance each time you play a note. It is displayed as both the note value and the number of units (there are 480 units in one quarter note).

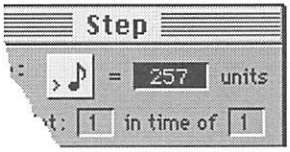
When inserting and placing, this value is used for computing the duration.

There are several ways to set the size:

- **Choose a note value from the note size pop-up.**



- **Highlight the units field and enter a new value.**



If you enter a value in the units field that is not an equal subdivision of the beat, the note pop-up will show a ">" or "<" symbol along with the current note size. This will show the approximate value.

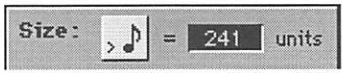
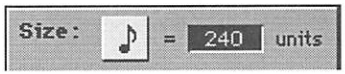


Figure 25.2: Approximate Note Sizes



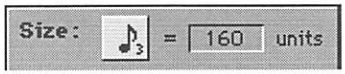


Figure 25.3: Exact Note Sizes

- **Use the Macintosh keypad to set a value.**
  This is the fastest way to set the Size value in the Note Size window.
  When the Note Size window is active, you can type keys on your Macintosh keypad to set the note size (you can also use the regular Macintosh keyboard, but using the keypad is faster):

Key	Function
1	Set step size to whole note
2	Set step size to half note
4	Set step size to quarter note
8	Set step size to eighth note
6	Set step size to sixteenth note
5	Set step size to thirty-second note
3	Toggle triplet setting on or off
. (decimal or period)	Toggle dot on or off
+ (plus)	Add the next value to the current value
- (minus)	Subtract the next value from the current value

Use the plus sign for long notes—you can type "1+.4" to create a whole note tied to a dotted quarter note. As you can imagine, with one hand on the keypad and one on your MIDI keyboard, you can step record music very quickly.

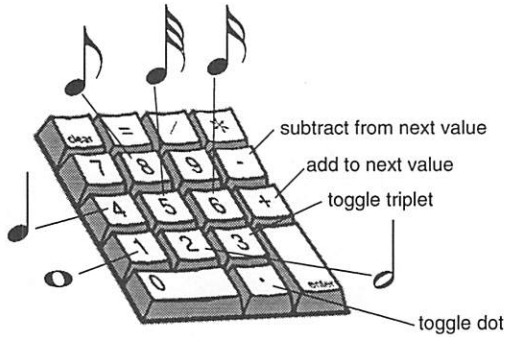


Figure 25.4: Numeric Keypad Note Equivalents

Tuplet Checkbox

You can also define the size as a tuplet by clicking the Tuplet checkbox. This gives you the ability to create complex timing divisions, such as 11 notes in the space of one quarter note (although you cannot show this in a Notation window):

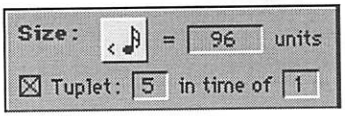


Figure 25.5: You can use the Tuplet checkbox to define odd timing divisions. In this example the counter will be advanced a fifth of a quarter note, or slightly less than a sixteenth note.

Use the mouse or keyboard to set tuplet fields. Vision will automatically calculate the units and update the note size pop-up.

❑ Duration Parameter

The duration is the length of the note you will enter. In the Step Record window, there are four possible Duration Modes: **Constant**, **Constant Gap**, **Percent**, and **As Played**. In the Insert Notes window, there are two possible Duration modes: **Constant Gap** and **Percent**.

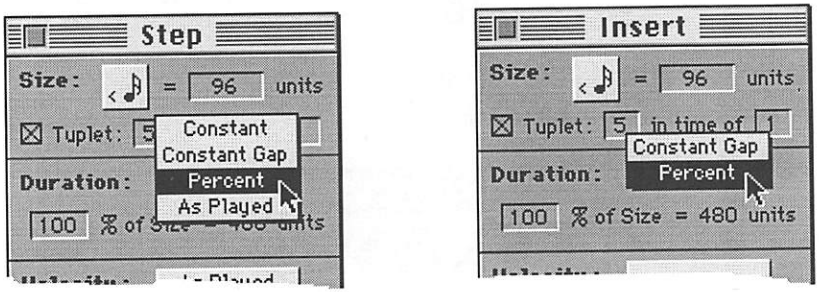


Figure 25.6: Choosing a duration mode. There are four choices when step recording, and two choices when inserting notes.

The duration is different from the size; the duration is the length of the note, and the size is the amount of time the counter will advance. The space between notes is called the Gap.

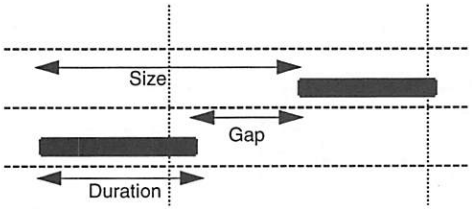


Figure 25.7: A visual guide to note parameters. Duration plus Gap equals Size.

Constant Duration Mode

This mode is only available in the Step Record window.

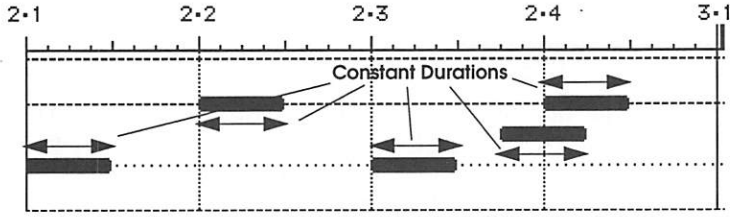


Figure 25.8: With Duration set to "Constant," you will get uniform note durations, regardless of size. Notice that you can have durations longer than size.

If you want all notes to be the same length (even if the step size changes), use the **Constant** setting.

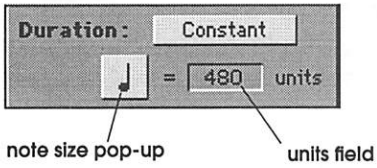


Figure 25.9: Constant Setting

To change the Constant duration, choose a value from the note pop-up or change the value in the units field. Changing either of these values updates the other one, like the **Size** setting (see page 287).

Constant Gap Duration Mode

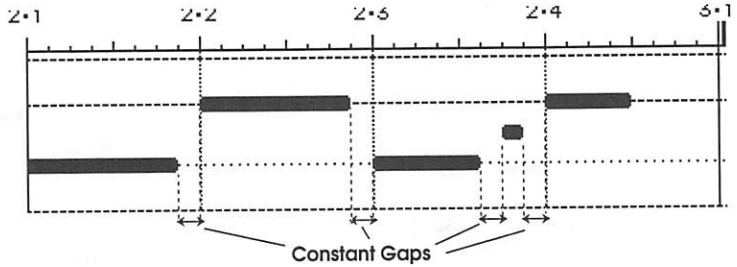


Figure 25.10: With Duration set to "Constant Gap" you will get uniform space between notes

You can set a constant gap to cause all notes to have an equal space between them.

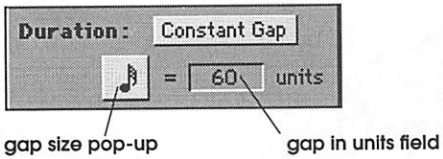


Figure 25.11: Constant Gap Setting

To change the size of the gap, choose a value from the note pop-up, or enter a new value in the units field.

Percent Duration Mode

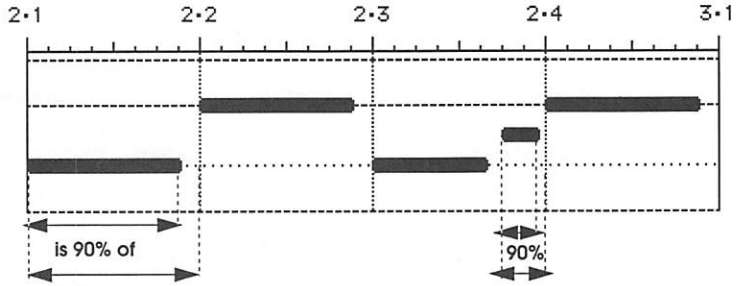


Figure 25.12: With Duration set to "Percent," Vision calculates each note duration as a percentage of the size. In this example, each duration is 90% of the size.

In percent mode, each duration will be automatically expressed as a percentage of the note size.

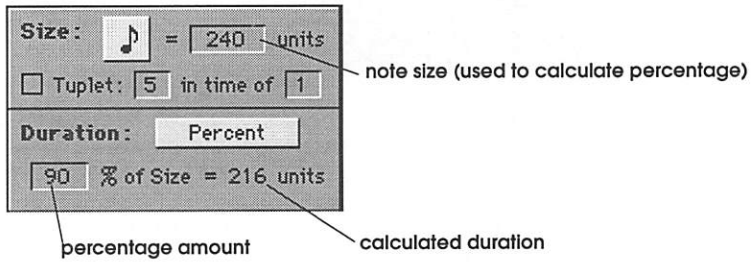

Size: = 240 units
Tuplet: 5 in time of 1
Duration: Percent
90 % of Size = 216 units
note size (used to calculate percentage)
percentage amount
calculated duration

Figure 25.13: Percent Setting—216 is 90% of 240

To change the duration using the percentage setting, change the percent amount. Vision will calculate the duration as a percentage of the note size.

A value of 100% will give you notes as long as the note size. You can set the percentage as high as 200%, which will give you notes twice as long as the amount the counter advances.

As Played Duration Mode

This mode is not available while you are inserting notes; you will not play notes while you insert them.

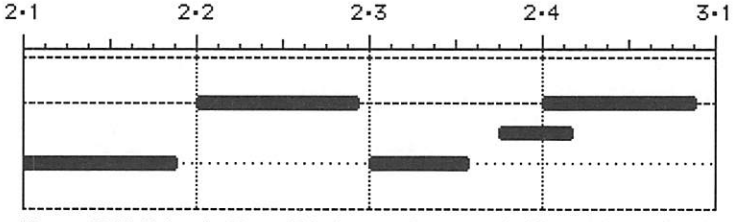


Figure 25.14: Using As Played Mode can give you all different sizes of note duration

This will record the durations as you actually play them.

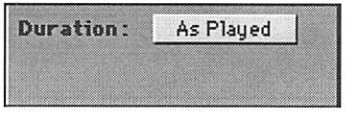


Figure 25.15: As Played Setting

❑ Velocity Parameter

In the Step Record window, there are two possible velocity modes: As Played or Constant. When the velocity is set to As Played, each note will be recorded with the velocity that you play.

In the Insert Notes window, or when the velocity is set to Constant, all velocities will be recorded at the value you define in the Constant Velocity field:

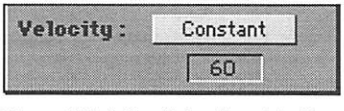


Figure 25.16: The Velocity set to Constant

To change the constant velocity, highlight the number and use the mouse or Macintosh keyboard to change the value.

PART 3: Vision Menus and Dialogs

CHAPTER 26: The File Menu

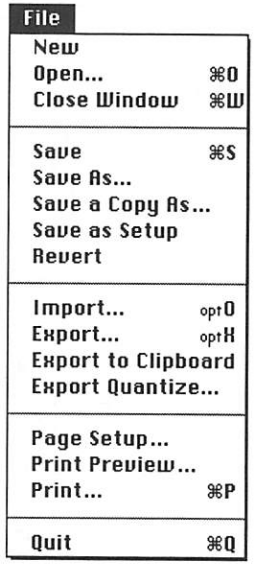


Figure 26.1: The File Menu

❑ New

Choosing **New** will close the current project (after you're prompted to save any changes) and open a new Sequences window with one empty sequence. This is similar to quitting Vision then immediately launching it—a new file will appear that has all of your default settings.

If you have a file called "Vision Setup" in the same folder as Vision, all setup objects (including instruments, input maps, MIDIKeys, fader information, and transpose maps) are read in from that file.

If you *do not* have a file called "Vision Setup" in the same folder as Vision, the instruments are made from your current studio setup.

Choosing **New** does not affect the contents of the Clipboard. Its contents are preserved, enabling you to copy and paste between old and new Vision files.

❑ Open ⌘-O

Choose this command to open an existing Vision file. When you choose this command, the Open Dialog will appear:

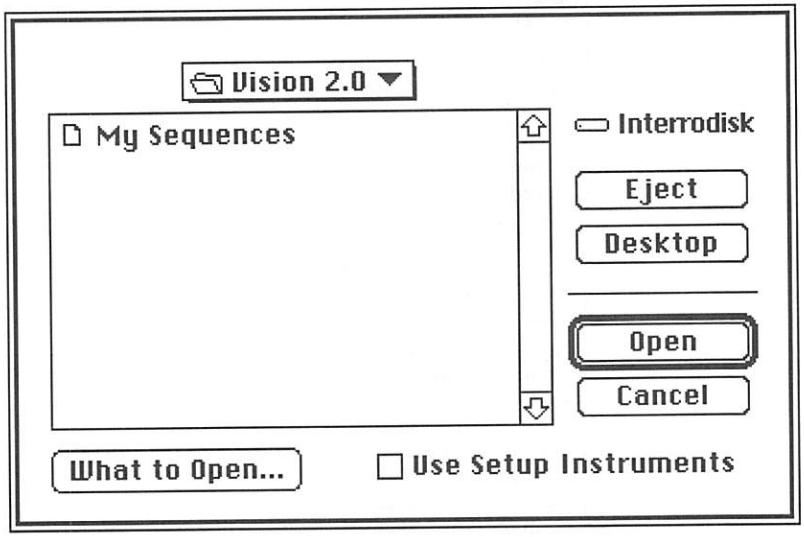


Figure 26.2: Open Dialog

When you have located and selected the file you wish to open, simply click the **Open** button to open the file.

The What to Open Dialog

Click the **What to Open** button to open the What to Open dialog:

Figure 26.3: The What to Open button

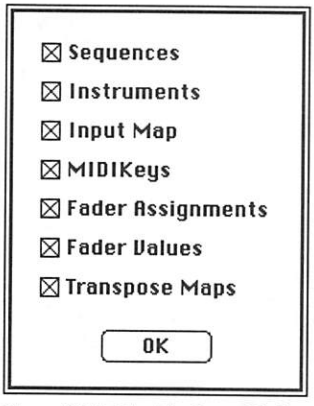


Figure 26.4: What to Open Dialog

This dialog box contains all the file objects that you can choose to open. Click the box next to each file object you wish to open, then click **OK** to return to the Open Dialog. Generally, you will want to open everything in a file. The default setting is that all items here are checked.

The Use Setup Instruments Checkbox ☐ Use Setup Instruments

Sometimes a Vision file may contain Instruments that are not the same as the ones in your current Vision Setup document. The Use Setup Instruments checkbox allows you to determine what happens when you open such a file.

If **Use Setup Instruments** is unchecked, the only instruments that will open are the ones in the file you are opening. (If other instruments are currently in use by the metronome, faders, Input Map, etc., then Vision will also add those Instruments if they aren't already present in the file being opened.)

If **Use Setup Instruments** is checked, the instruments in your setup file will open, then the instruments in the file you're opening that differ from your setup instruments will be added. This option gives you a more consistent set of instruments from one file to the next, so that the same command key will select the same instrument.

The file will play exactly the same regardless of the condition of this checkbox. This option only determines the number of open instruments and their order.

If you open a file and Vision does not recognize the instruments (i.e., they're not in the current Studio Setup document), the Remap dialog will automatically appear. See "Undefined Channels" on page 364 for more information on this dialog.

❑ Close Window ⌘-W

Choosing this command will close the active window.

If the active window is the Sequences window, this will also close the current Vision file. You will be asked if you want to save changes before closing, where you can choose to save, discard, or cancel the close.

You cannot close the Control Bar.

❑ Save ⌘-S

Use this command to save the current file to disk. If the Sequences window is untitled, you will need to name the file and find a location for saving it.

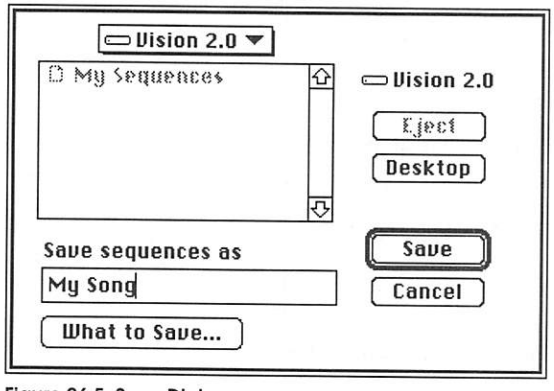


Figure 26.5: Save Dialog

After you have named your file, the Save dialog will no longer prompt you—your file will simply overwrite the previous version.

If the Names window is active, choosing **Save** will save the current names in the current name file. Sequences will not be saved if the Names window is active.

If you are saving for the first time, you can choose the file objects that you wish to save.

You must save sequences and instruments, but you may also save other items that differ from your Setup file.

You'll probably never want to save Transpose Maps in Sequence files, so that they will always be in your Setup file—this way you won't have many unnecessary copies of them.

Figure 26.6: What to Save Dialog

❑ Save As

Choosing **Save As** will open the Save Dialog (see Figure 26.5 on page 299). Use this command to save your file under another name, and keep an old version of your file untouched.

After finishing a **Save As** command, the current file will be the name of the file you just saved. The original file will still be in the original location. This is good for creating successive versions of the same project.

You can also see the current file objects by choosing this item.

❑ Save a Copy As

This command is very similar to **Save As,** but it lets you save any combination of file objects to any file at any time, without changing the current file. When you use the **Save a Copy As** command, you are not required to save sequences and Instruments (you must do this with normal **Save** operations).

However, if you use it to save either sequences, an Input Map, or Fader Assignments, then you are *strongly* encouraged to save Instruments as well—sequences, Input Maps and Fader Assignments refer to Instruments by number. MIDIKeys and Transpose Maps can be saved independently at any time.

After finishing a **Save a Copy As** command, the current file will be the same as before you invoked the command. This makes **Save a Copy As** useful for making backup copies to other disks without returning to the Finder.

If the Names window is active, then this command will only save names information.

❑ Save as Setup

When you choose this command, Vision will save the following file objects in a file called "Vision Setup" in the same folder as the Vision application:

- Instruments
- Input Maps
- MIDIKeys
- Fader Assignments
- Fader Values
- Transpose Maps

If this file doesn't exist, Vision will create it when you invoke this command. If this file already exists, Vision will update it.

If you would like to update only certain file objects in the Vision Setup file:

1. **Choose Open from the File menu.**
2. **Select the Vision Setup file.**
3. **Click the What to Open button.**
4. **Uncheck the file object(s) you wish to keep. Click OK.**
5. **Click Open to open the Vision Setup file.**
6. **Choose Save as Setup from the File menu.**

❑ Revert

Use this command if you would like to discard any changes you have made since the last Save operation. When you invoke this command, Vision will re-read the file from your disk.

If the Names window is open when you choose **Revert,** the names will be reverted and the sequences will be untouched.

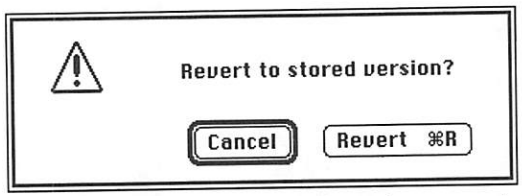


Figure 26.7: Before Reverting to a file, make sure you have saved a version you like.

❑ Import (option-O)

To import a file, make sure the Sequences window is open and active. When you choose **Import,** the Import Dialog will appear:

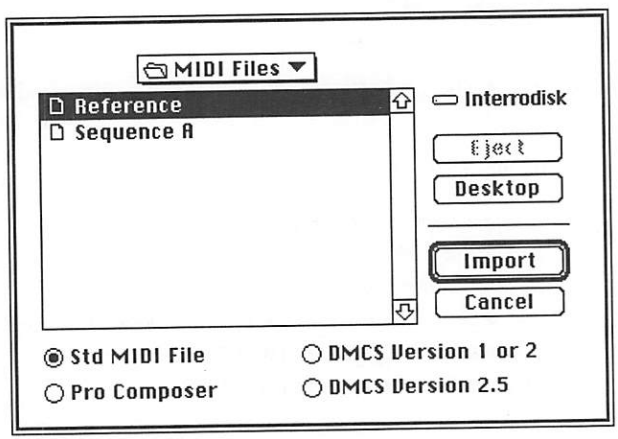


Figure 26.8: Import Dialog

Select the type of file you wish to import by clicking the button beside the type of file you want. Then, locate and select the file you wish to import, then click **Import.** The selected file will be added to the end of the sequence list.

About MIDI Files

There are two types of MIDI files: single track (type 0) and multitrack (type 1). When you select the **Std MIDI File** radio button, both types are listed in the file list.

Single-track (type 0) will be unmerged so that each channel is on a separate track.

When importing a MIDI file, if a track doesn't contain the name of a defined device, Vision will create a device called "MIDI File." You can then re-map this device so that future MIDI files can automatically associate themselves with the right devices. For more information on re-mapping, see page 364.

About Importing Notation Files

If you're importing a one of the notation file types, Vision will only recognize notes, rests, tempo, meter, and dynamic markings. All other symbols will be ignored.

❑ Export (option-X)

Before choosing **Export,** you must select a sequence. The Export Dialog is similar to the Save Dialog:

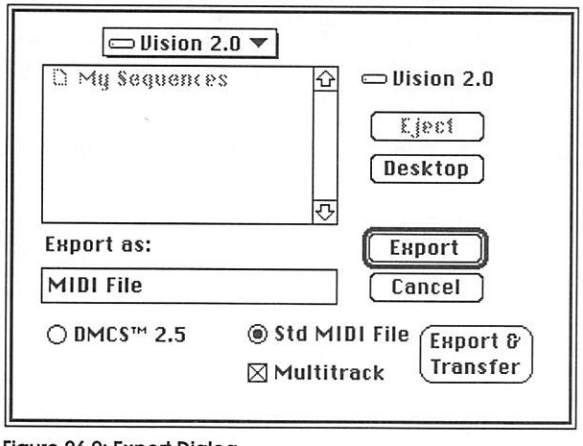


Figure 26.9: Export Dialog

If you select **Std MIDI file,** you need to decide if you want to create a type 0 MIDI file (single track) or type 1 (multitrack). If you leave the Multitrack checkbox unchecked, the sequence will be written to a single track MIDI file. Loops will be unlooped and played as if you had recorded it in real-time.

If you check the **Multitrack** checkbox, Vision will write the file in the same way (captured without loops), but each track will remain separate.

Clicking **Export &Transfer** will allow you to launch a new application (presumably a notation program) from Vision while you export your DMCS or MIDI file.

❑ Export to Clipboard

Choosing this command translates the current selection into standard MIDI data (type 1—multitrack), and places it on the Macintosh clipboard. This is useful for transferring data between applications without saving and importing new files. If you have both applications open, you can use this command to simply cut and paste between applications.

This command is slightly different from **Copy** (page 311). Copying data places the information on the Clipboard in Vision's native format, which cannot be understood by other MIDI applications. Using **Export to Clipboard** translates the data into a format that other applications that use MIDI files can understand.

If the current selection contains loops or subsequences, it is captured before it is exported. Multiple tracks that have the same instrument designation will *not* be merged together into a single track, like when you use **Capture Seq–>Track** (page 323).

Choosing this menu item will also perform a **Copy** command (see page 311).

Export Quantize

Use the **Export Quantize** command to open the Export Quantize dialog. Here, you will define the quantize value that will be applied to your data as it is exported to a notation program (via the **Export** command).

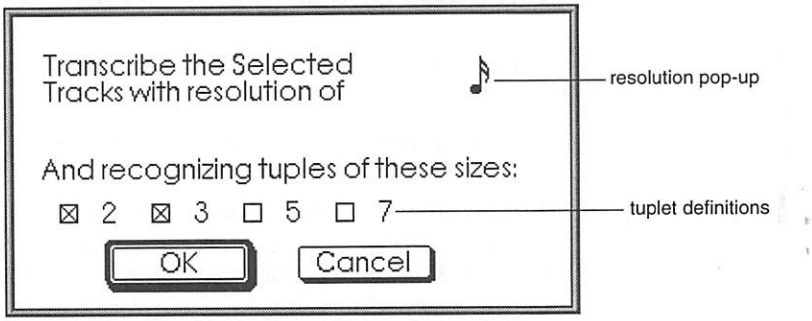


Figure 26.10: Export Quantize Dialog

Different tracks can have different export quantize settings. Select the tracks for which you want to set the export quantizing *before* choosing this command.

Export Resolution Pop-Up

Choose a value from the resolution pop-up to set the level of quantize for your exported data. The main reason to quantize your data for export is for using another application for notation.

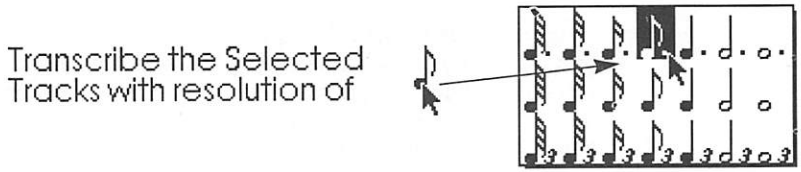


Figure 26.11: Choosing a Quantize Resolution for Export

Export Tuplet Definitions

These checkboxes provide a way for Vision to quantize based on even subdivisions of the resolution you set above. If you know your music doesn't have any triplets or quintuplets, you can uncheck these before exporting.

Check the dialog boxes of the tuplet types you want to export.

Troubleshooting

Here are some common problems and solutions you may experience when importing data into a notation application:

- many small notes and tuplets tied together

  Use a harder quantize setting before exporting your data. Also consider using Quantize Durations (page 249).
- large sections appear to be missing from the score

  You must capture a sequence before you export it. Vision will ignore subsequences that aren't captured during export, and this could cause large sections to "disappear" from your score. Use **Export to Clipboard** to automatically capture the tracks.
- chords covering multi-octave range in a single staff

  Use **Split Notes** in the **Do** menu (or any other technique you choose) to split the MIDI information into different tracks before you export it. See page 355 for more information on splitting notes.

❑ Page Setup

Choosing **Page Setup** will cause the standard Page Setup dialog box for your printer. After you choose a new printer in the Chooser, you should choose this menu item. This dialog box will allow you to make decisions about how your document will look that are specific to your printer. See your printer documentation for more information.

❑ Print Preview

Choosing **Print Preview** will cause the Print Preview window to appear, where you can view your music as it will appear on the printed page, and make some adjustments. A Notation window must be active for this item to be available.

See "The Print Preview Window" on page 93 for more information.

❑ Print ⌘-P

When you choose this menu item, Vision will print your music as it appears in the Print Preview window. A Print Preview or Notation window must be active for this item to be available.

❑ Quit ⌘-Q

When you choose this menu item and you haven't saved your most recent changes, Vision will ask if you would like to save changes to the current document. At this point you will be able to save and quit, discard changes since your last save, or cancel the quit command and continue working. After verifying and saving, Vision will close and return to the Finder.

CHAPTER 27: The Edit Menu

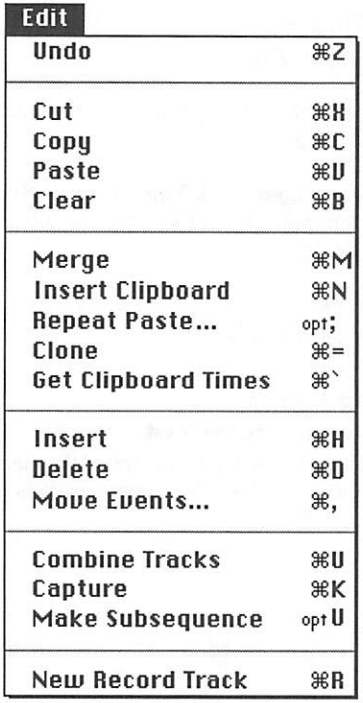


Figure 27.1: The Edit Menu

❑ Undo ⌘-Z

This command reverses the effect of the last command (most actions can be undone). The name of the **Undo** command will change depending on the action (e.g., Undo Clear, Undo Record, Undo Make Subsequence, etc.).

After you choose this command, it becomes **Redo,** which allows you to quickly audition the effect of any change or edit.

Generally, you can undo all changes to sequences, tracks, events, or text. You *cannot* undo the following actions:

- Save commands
- Copy commands
- changes to Instruments
- changes to Names
- changes to MIDIKeys
- changes to the Input Map

When recording, this command has special considerations. See the note on page 46 for more information.

You cannot undo the **Copy** command. This has the distinct advantage of allowing you to change a track then, if you like both the old *and* new versions, you can retain them both. To do so:

1. **Copy the new version.**
   Vision places a copy on the Clipboard.
2. **Choose Undo.**
   Vision reverts to the old version.
3. **Select a new location and choose Paste.**
   Since the new version is still on the Clipboard, Vision pastes it into the new location. Vision now contains both the old and new versions of the track.

❑ Cut ⌘-X

This command removes the selected items from the active window and places them on the Clipboard.

Vision will recognize any MIDI events you cut as a sequence—this ensures that you can cut and paste between different types of windows. The name of this menu item changes depending upon which window is active and what you have selected (e.g., Cut Track, Cut Selection, Cut Instrument, etc.).

Cutting does not affect the length of a track or sequence. When the selected events are removed, the information around them does not change. To erase the time as well as the data, use **Delete Selected Time** (see "Delete Selected Time" on page 320).

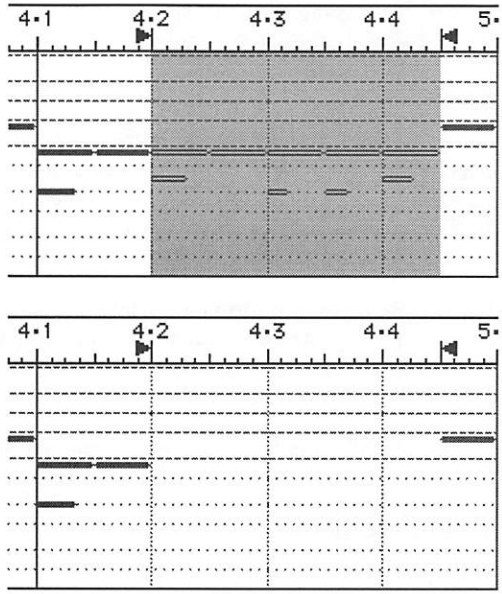


Figure 27.2: Cutting MIDI data leaves a space where the data was

❑ Copy ⌘-C

This command places the selected items on the Clipboard without changing the source MIDI data. The selected items remain unchanged.

Vision will recognize any MIDI events you copy as a sequence—this ensures that you can cut and paste between different types of windows. The name of this menu item changes depending upon which window is active and what you have selected (e.g., Copy Track, Copy Selection, Copy Instrument, etc.).

Copy Faders

When the Faders window is active, this command is **Copy Faders,** which will copy all the assigned fader values. You can take a "snapshot" of these fader values, then paste them in a single track. When Vision plays these fader events, the faders will be reset to their copied values.

❑ Paste ⌘-V

This command places a copy of the Clipboard data into the active window. The name of this menu item changes depending upon the type of information contained in the Clipboard, which window is active, and what you have selected (e.g., Paste Track, Paste Instrument, Paste Subsequence, etc.).

When pasting certain types of information, you must make a selection first. For example, if you want to paste an instrument, you must select an instrument (in the Instruments window) before you can paste. The contents of the clipboard will overwrite the current selection.

Vision will automatically number items that contain the same name. For example, if you have copied a track called "Bass" from the Tracks window and paste it in the same window (or any Tracks window with an identical name), the new track will be renamed "Bass #2."

Pasting in the Sequences Window

When you paste a sequence in the Sequences window, a new sequence will be added after the last one, unless you have already selected one or more sequences. If you would like to replace one or more sequences with the Clipboard contents, select the sequences, then choose **Paste.**

If you want to paste the sequences into a new sequence location, be sure to de-select all sequences in the active sequences window. You can easily do this by clicking in the selection column header (for an illustration, see page 6), or click after the last sequence in the list.

Working with Multiple Sequences

If the Clipboard contains a different number of sequences than you have selected in the Sequences window, Vision will confirm that you wish to replace the current selection with the Clipboard contents.

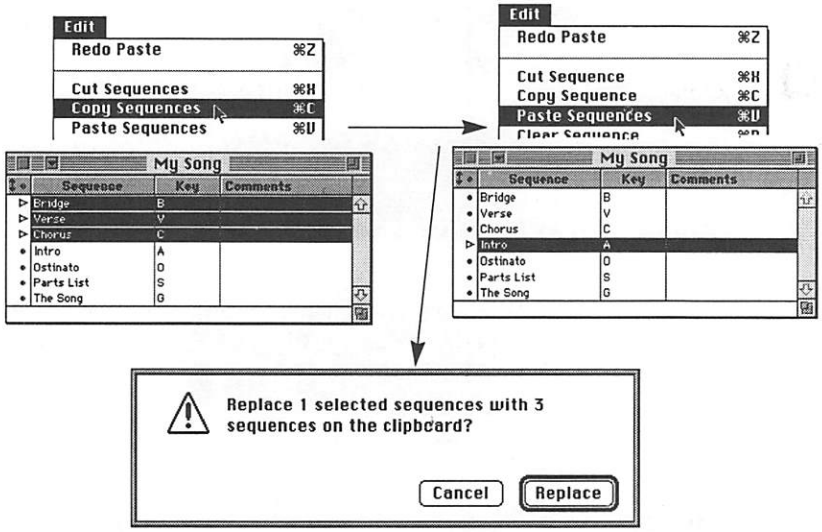


Figure 27.3: Pasting different numbers of Sequences

You can also paste Sequences into a Track Overview or List window to create subsequences. See *Chapter 8: Understanding and Using Subsequences* for more information.

Pasting in the Tracks Window

You must have a track selected in order to paste a track in the Tracks window. When you paste, the old track will be overwritten by the Clipboard contents.

If the Clipboard contains more tracks than you have selected, it will paste only the first Clipboard tracks to the selected tracks. For example, if there are three tracks on the Clipboard and two tracks selected, only the first two tracks will be pasted.

If you have more tracks selected than are on the Clipboard, Vision will automatically make multiple copies.

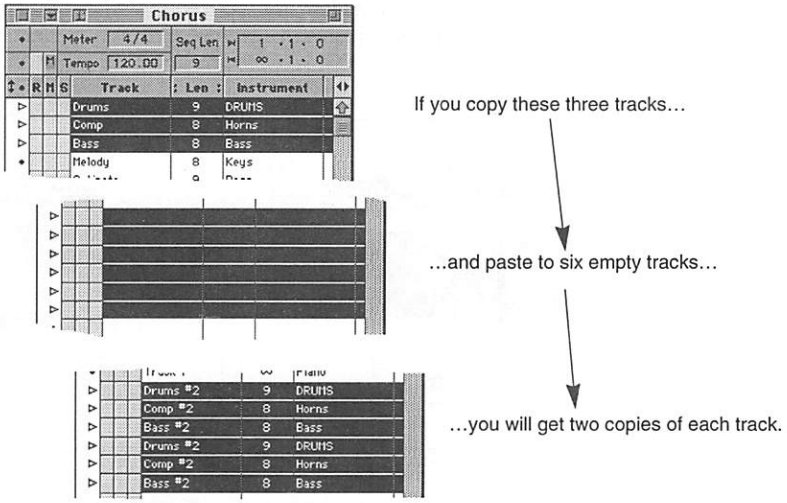


Figure 27.4: Pasting Multiple Tracks

Pasting MIDI Data

When pasting MIDI events to an edit window, the clipboard will be placed at the Edit In point. If there are any events already present during the length of the Clipboard, they will be replaced (to avoid this, use **Merge** or **Insert Clipboard** instead, explained later in this chapter).

Instrument Reassignment

When the Clipboard contains only one track with only one instrument and you paste it into a track with a different instrument, all of the pasted data will use the instrument of the track you paste into. It will *not* make a multi-instrument track. To make a multi-instrument track, paste to an empty track, clear the portion of the original track that would bave been pasted over, then combine the tracks with the **Combine Tracks** command.

❑ Clear ⌘-B

Clear is similar to **Cut,** but does not save the selection to the Clipboard. Clearing MIDI events does not affect the length of a track or sequence. When the selected events are removed, the information around them does not change.

You can clear many types of data, and the name of the menu item will change depending upon which window is active and what you have selected (e.g., Clear Selection, Clear Sequence, Clear Instrument, etc.).

❑ Merge ⌘-M

This command will combine the contents of the Clipboard information at the Edit In point of the current track. It doesn't change any data that is already in the track.

Merge is different than **Paste** because the previous track contents are not replaced.

Instrument Reassignment

When the Clipboard contains only one track with only one instrument and you merge it into a track with a different instrument, all of the merged data will use the instrument of the track you merged into. It will *not* make a multi-instrument track. To make a multi-instrument track, paste to an empty track and then combine the tracks with the **Combine Tracks** command.

❑ Insert Clipboard ⌘-N

This command will paste the Clipboard contents at the Edit In point of the selected track. Any MIDI events that are already present will be shifted later in time to make room for the Clipboard data. This command will change the track length, because it retains all the previous information and adds the length of the Clipboard contents.

Insert Clipboard is different than **Paste** because the previous track contents are displaced, but not replaced.

Instrument Reassignment

When the Clipboard contains only one track with only one instrument and you insert it into a track with a different instrument, all of the inserted data will use the instrument of the track you inserted into. It will *not* make a multi-instrument track. To make a multi-instrument track, paste to an empty track, insert an equivalent amount of blank time into the original track, then combine the tracks with the **Combine Tracks** command.

❑ Repeat Paste (option-;)

Use this command to paste, merge, or insert the Clipboard information several times, beginning at the Edit In point of the current track.

This is an excellent command to create the equivalent of "nested loops," if you use the **Insert into track** option.

When you select this command, the Repeat Paste dialog will appear:

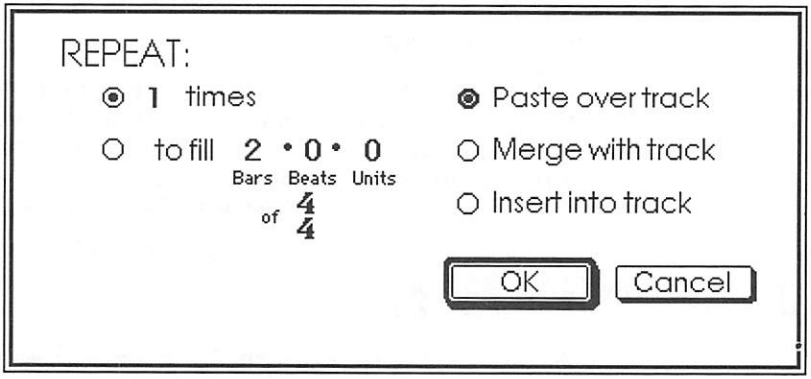


Figure 27.5: Repeat Paste Dialog

Number of Repeats

You can specify whether you want to repeat a finite number of times, or repeat to fill any number of bars•beats•units. Click the appropriate radio button on the left side of this dialog, and use the mouse and Macintosh keyboard to set the fill parameters you desire.

If you select a region before choosing this command, the current time selection will automatically be in the time fields.

Describe How to Paste

There are three ways to paste. Click the appropriate radio button to describe how Vision will paste the data:

- Paste over track

  This will replace the current track contents with the Clipboard contents
- Merge with track

  This will paste the Clipboard contents, but the current track contents will not be erased.
- Insert into track

  This will move the current track contents the length of the new material you are pasting, then paste the clipboard contents at the Edit In point.

❑ Clone ⌘-=

Cloning Subsequences

You must be in a Track Overview or List window to Clone a subsequence. You should have many events referring to the same subsequence for cloning to be effective. Normally, Vision will apply subsequence edits to each event that refers to it. Cloning a subsequence will make it independent from its siblings —you can edit it without affecting subsequences used by other events.

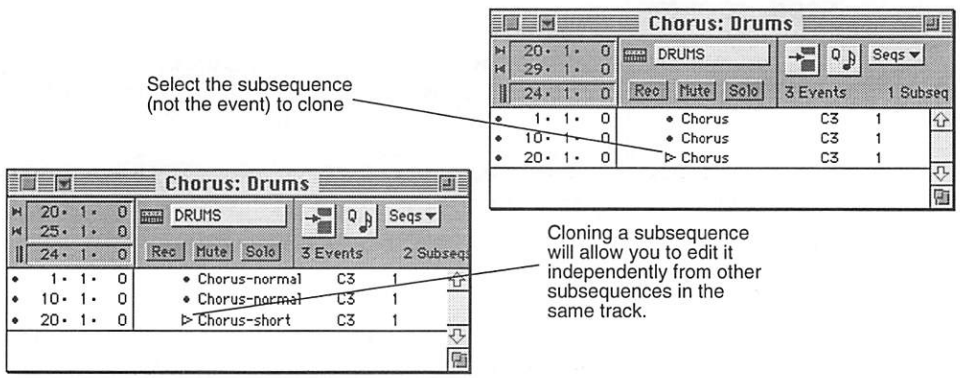


Figure 27.6: Cloning Subsequences

For more information on subsequences, see *Chapter 8: Understanding and Using Subsequences.*

Cloning Name Lists

You can clone Name Lists in the Names window. There may be a time when you need to edit the contents of a Name List for a single device channel, but you don't want this change to affect the other names in the same device.

To clone a Name List, select it and choose **Clone.** For more information on Name Lists, see "Device/Name Lists" on page 255.

❑ Get Times from Clipboard ⌘-`

This command will get the edit points from the clipboard and paste them into the edit points of the current Edit window.

Suppose you copied a section of a track to the Clipboard. If you change the Edit In point of the destination track, you may not know where to paste the information. If you choose **Get Times from Clipboard** before pasting, you will make sure that the information will be pasted in the same location.

❑ Insert ⌘-H

The **Insert** command has different functions, depending on the active window.

Insert Track(s)

When the Tracks window is active and you have tracks selected the name, length, and instrument are highlighted. Choosing the **Insert Track(s)** command will create the same number of new tracks that you have selected and place them above the top selected track.

Insert Blank Time

This command will insert an amount of blank time (empty time, no events) that is equal to the selection. All MIDI events after the Edit In point will be shifted to the end of the Edit Out point.

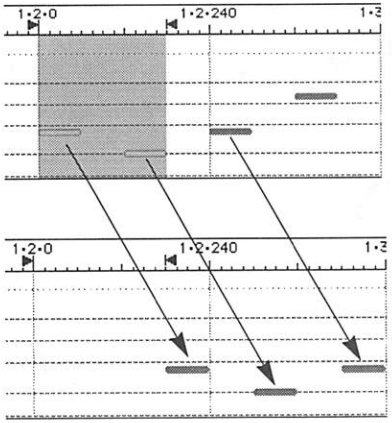


Figure 27.7: Insert Blank Time shifts your Events the amount of the selection

❑ Delete ⌘-D

The **Delete** command has different functions, depending on the active window.

Delete Track(s)

When the Tracks window is active and you have tracks selected the name, length, and instrument are highlighted. Choosing the **Delete Track(s)** command will erase the selected tracks, and shift all remaining tracks to fill the empty space. This will not affect the Clipboard.

Delete Selected Time

When you have defined a selection in an Edit window, this command cuts the selected MIDI events to the Clipboard and shifts all remaining events after the Edit Out point to fill the empty space.

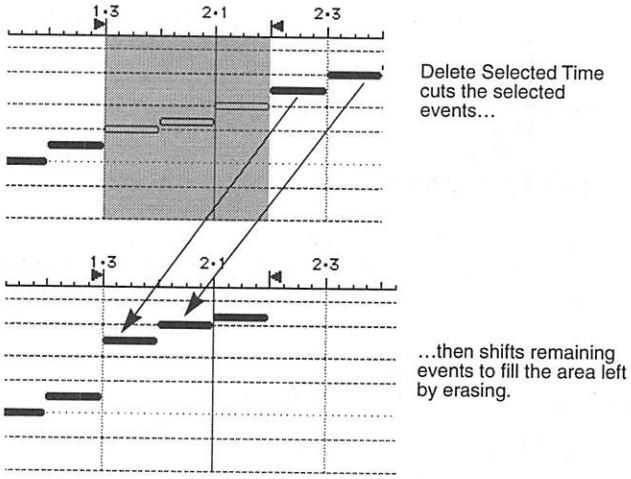


Figure 27.8: Delete time erases the events and the time in the selection

❑ Move Events ⌘-,

Choosing this menu item opens the Move Events dialog. Using this dialog, you can move selected events to a specific location, or by any increment:

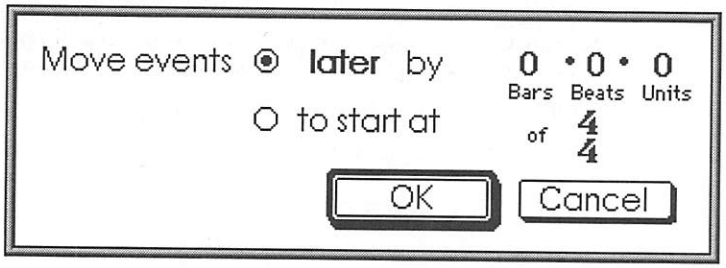


Figure 27.9: Move Events Dialog

Move Events by Increment

If you want to move the selected MIDI events by a specified amount, click the top radio button and set the Bars•Beats•Units.

The bold word (shown as "later" in Figure 27.9) is a toggle—click it to move the events be a positive value (later) or negative (earlier).

You cannot specify an amount that would move the first selected event to occur before the beginning of the track.

Move Events to Location

If you want to move the selected events to a specified location, click the bottom radio button. Set the Bars•Beats•Units to the counter location you wish to move the events to, and click OK.

❑ Combine/Separate Tracks ⌘-U

This command is only available if you have tracks selected in the Tracks window. If more than one track is selected, the **Combine Tracks** command collapses them all into a single track located where the first one was. Other tracks in the sequence move up to fill the void.

If the tracks were using different Instruments, the new track will be a Multi track.

This is especially useful if you are using more than one instrument to create a sound that you think of as "one." For example, if you are building a drum set, you may love the kick and snare sounds on one module, but you must use the hi-hat sound in another module. After you have finalized the tracks, you may want to always refer to all three tracks as one.

Vision will automatically name the combined track "Track n", where n = the next available track number.

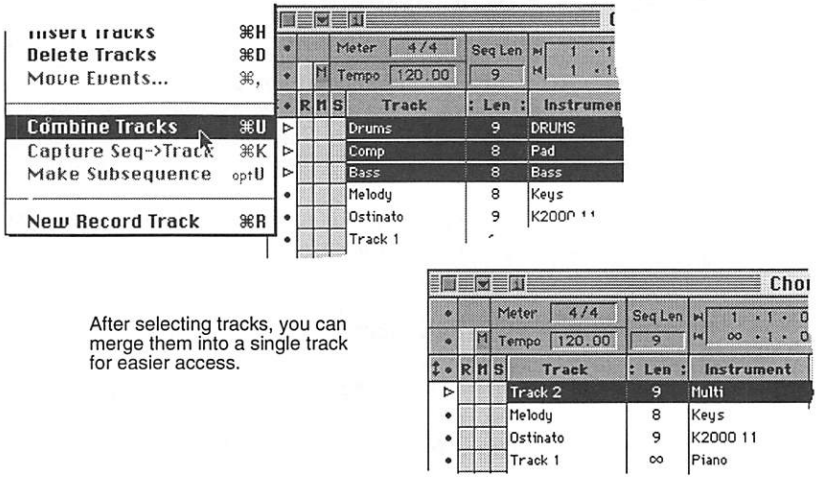


Figure 27.10: Combining Tracks

If the selected Track is already a multi track, this command becomes **Separate Multi Track**, which unmerges it into non-Multi tracks, located next to each other. Other tracks in the sequence are shifted down.

Vision will automatically name these tracks based on the original track name, followed by numbers.

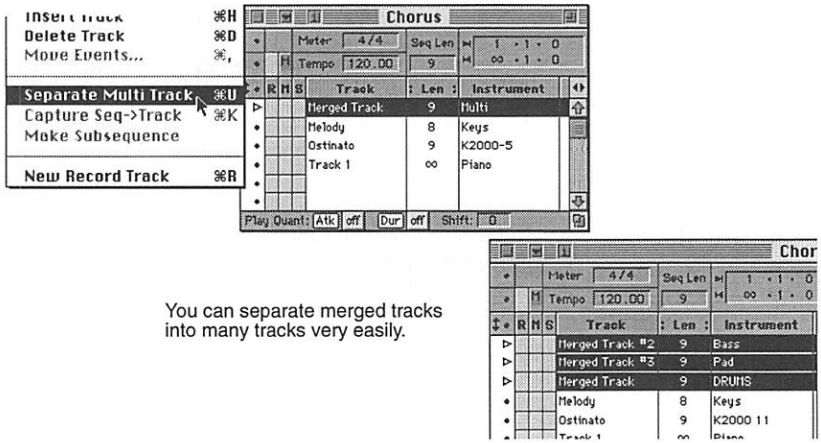


Figure 27.11: Separating Tracks

❑ Capture Sequence ⌘-K

Capturing is a process that "plays" the selected sequence into a new track. Capturing creates a chronological stream of events—all looped data is unlooped as if it were played in real time. Subsequences are also played into the new track as if you played them in real time.

You must copy a selection of MIDI events before you can use this command. When you copy any MIDI selection, Vision internally refers to it as a "sequence," even if the original data was a specific selection within a track or sequence. There are two possible names for this command: **Capture Seq->Track** and **Capture Seq->Seq.**

To use the **Capture Sequence** command:

1. **In the Sequence window, Tracks window, or one of the Edit windows, make a selection.**
2. **Choose Copy from the Edit menu.**
3. **Select a destination track or sequence, or have the Sequences window active with no sequence selected.**
4. **Choose Capture Seq->Track or Capture Seq->Seq from the Edit menu.**

Capture Seq->Track

If you have a track selected in the Tracks window, Vision will capture the Clipboard information into the selected track. All loops and subsequences will be transcribed into a continuous stream of MIDI data. If the Clipboard information contains many tracks, Vision will create a multi track so that all the instruments are retained. Only 16 instruments can fit into a track—if your sequence has more than 16 instruments, capture to a sequence, instead.

Capture Seq->Seq

If the Sequences window is active, Vision will capture the Clipboard information into a new sequence. If you have already selected a sequence, the sequence on the Clipboard will replace the selected sequence. All loops and subsequences are transcribed into a continuous stream of MIDI data. Each instrument will be placed on a separate track, but information from separate tracks with the same instrument will be merged into the same track.

❑ Make Subsequence

Many selections made in an Edit window can be turned into a subsequence. The selected information will be cut from its current location and placed into a subsequence in the first available track. This is especially useful in the Track Overview window where you can see subsequence blocks.

For more information about making subsequences, see "Making Subsequences" on page 113.

Unmake Subsequence

If you have selected a subsequence, this command becomes **Unmake Subsequence.** Invoking this command will place the tracks in the subsequence into the parent sequence.

For more information about unmaking subsequences, see "Unmaking Subsequences" on page 115.

❑ New Record Track ⌘-R

This command will place the next empty track in the current sequence into record mode. If there are no sequences selected, Vision will automatically select the first sequence in the Sequences window. This command is especially useful if you want to start playing immediately—it ensures that an empty track will be placed in record mode.

The Tracks window does not need to be open or active for this command to work, so you may not see the track you are recording to.

Record Enabling Neighboring Tracks

After choosing this menu item, you can type the command-up arrow and command-down arrow to record-enable the previous and next tracks in the Tracks window.

Record Enabling a New Track in an Existing Sequence

You can change the sequence you will be recording to:

1. **Choose New Record Track from the Edit menu.**
   You can also type Command-R.
2. **Type the Sequence key for the Sequence into which you want to record a new track.**
   For information on Sequence key assignments, see page 162.

Record Enabling a New Track in a New Sequence

You can add a new sequence and automatically set up a track to record:

1. **Choose New Record Track from the Edit menu.**
2. **Type Command-N to create a new sequence.**

CHAPTER 28: The Do Menu

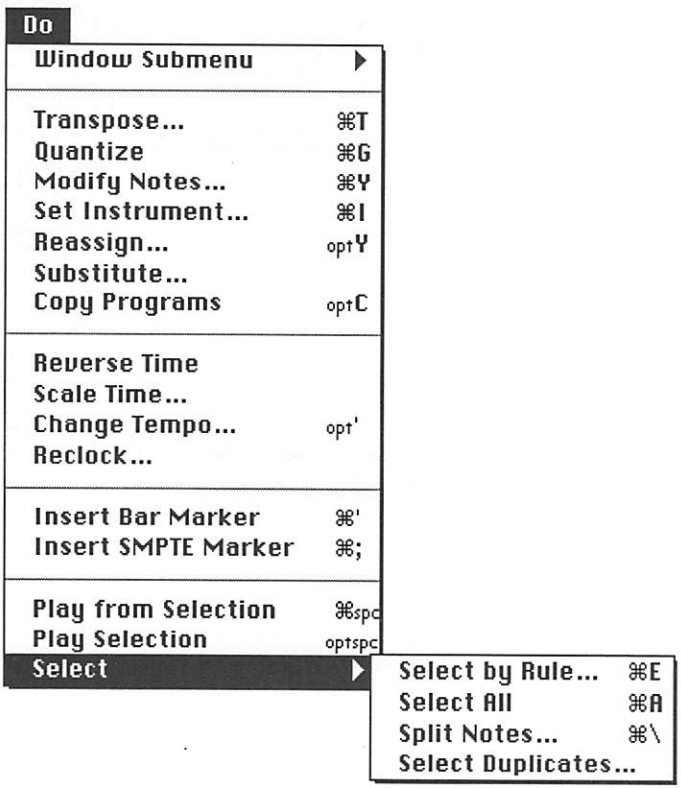


Figure 28.1: The Do Menu

❑ Window Submenu

The Window submenu is the first item in the Do Menu. The name will change depending on the window that is currently active.

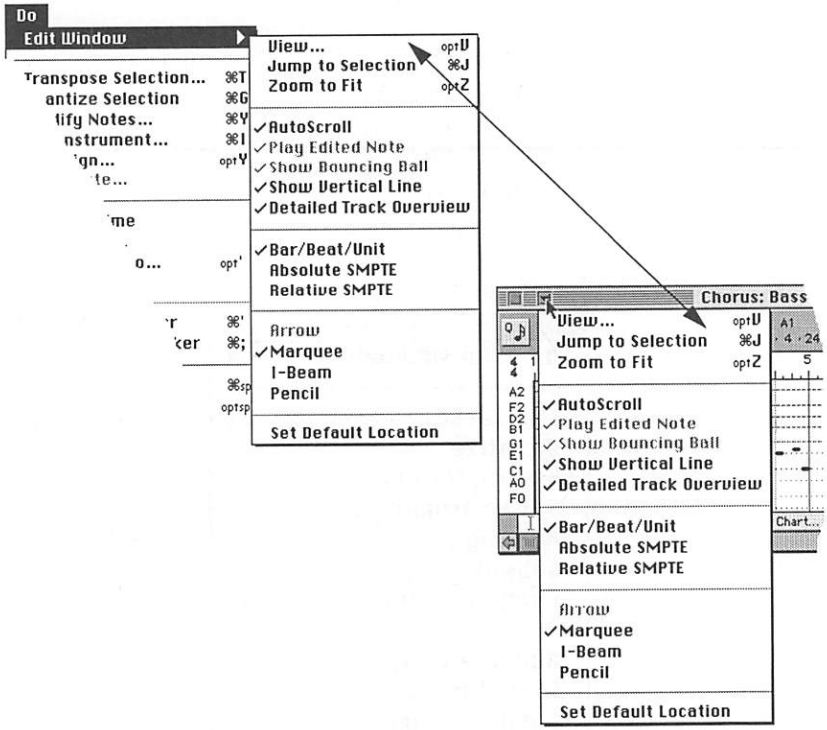


Figure 28.2: The Window submenu contains the same items that are in the Window menu of the active window.

There are six possible Window submenus:

- Sequences Window or Control Bar

  Available when the active window is the Sequences window or the Control Bar. For more information, see page 163.
- Edit Window

  When the active window is a Tracks window, List window, Graphic window, or Notation window. For more information, see page 165.
- Instruments Window

  Available when the active window is the Instruments window. For more information, see page 241.
- Names Window

  Available when the active window is the Names window. For more information, see page 256.
- Input Map Window

  Available when the active window is the Input Map window. For more information, see page 264.
- MIDIKeys Window

  Available when the active window is the MIDIKeys window. For more information, see page 272.

Tip: One reason the Window submenu is provided here in the **Do** menu is so you can use a macro program to make keyboard equivalents for any menu items which don't already have one. This can automate many tasks, especially if you are using an extended keyboard.

❑ Transpose ⌘-T

Choosing this command will open the Transpose dialog. Use this dialog to create and apply transpose maps to the current selection.

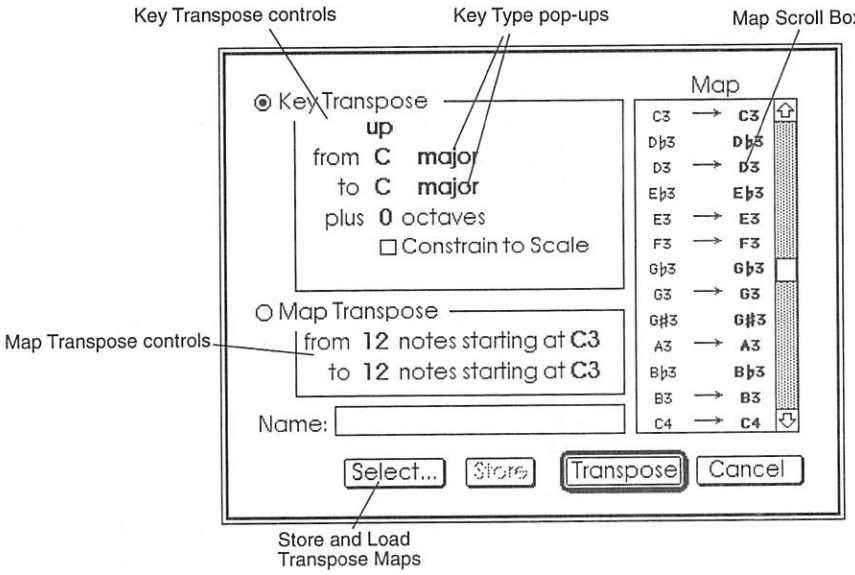


Figure 28.3: Transpose Map Dialog

You can use this dialog to map any MIDI note to another MIDI note or map any specified scale to another scale. You can save these maps so you can apply them to other Vision files.

This dialog is most useful when you want to apply complex transpositions, or when you want to apply a different mode. If you want to simply transpose the entire part up or down by a fixed amount, it is far simpler to select all the events in an Edit window, then drag the notes up or down.

Key Transpose

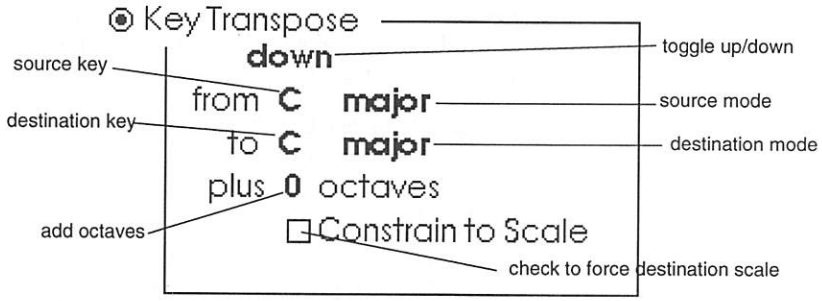


Figure 28.4: The key Transpose Controls

Vision cannot determine the key of your music. It interprets all your notes as if they were in the source key and mode (or scale), then transposes each note to the corresponding pitch in the destination key and mode.

It doesn't matter if the original data is in the source mode at all. For example, E-flat is not in the C-major scale—it's a minor third above the tonic. So, if you tell Vision to transpose an E-flat from C-major to F-major, Vision will transpose it to an A-flat—a minor third above the destination tonic of F.

You can click any of the items shown in Figure 28.4 to affect the way Vision will transpose each note in the selection. If you are familiar with musical modes, you may wish to choose a mode from either one of the mode pop-ups:

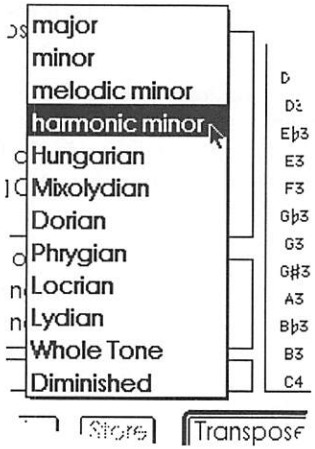


Figure 28.5: Mode pop-up

If you want your notes to fall exactly in the destination mode, check **Constrain to Scale.** If this is checked, all notes will be transposed to notes in the destination scale. If you use a Constrain to Scale transpose map on an Instrument, all incoming notes will be transposed: even if you sit on your keyboard, you will be perfectly in key.

Vision will always update the Map Scroll Box to reflect the transposition. You can edit it further using Map Transpose.

MIDI Keyboard Shortcut. With the Key Transpose radio button selected, you can instantly apply a chromatic transpose map by playing a note on your MIDI keyboard. Vision will automatically apply a map between middle-C and whatever note you play. To "reset," hit a middle-C on your MIDI controller with no map selected.

Map Transpose

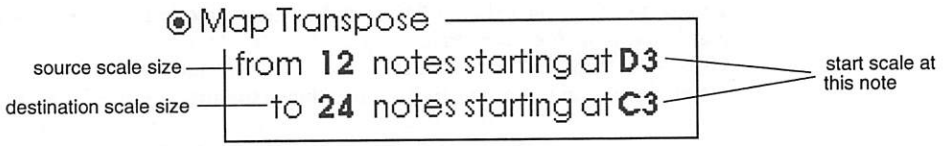

Map Transpose
source scale size
from 12 notes starting at D3
destination scale size
to 24 notes starting at C3
start scale at this note

Figure 28.6: Map Transpose Controls

Using Map Transpose allows you to transpose without the diatonic restrictions of Key Transpose (with Key Transpose, you will always use a 12-note scale). With Map Transpose, you can change any MIDI note to any other MIDI note.

You can set the transpose scale size to numbers other than 12. For example, you could transpose some notes from a 12-note scale to a 24-note scale, and play it diatonically on a keyboard tuned to quarter tones. Or, you could set up a map from 128 notes to 128 notes, so that any change you make will not happen every octave.

The scale size numbers show the size of the source and destination scales. The note numericals set the notes upon which each scale begins. Here are some situations where you may need to use Map Transpose:

- If you need to transpose a part recorded on a synthesizer tuned in halftones to one tuned in quarter tones. Use a 12 note to 24 note map, starting at the MIDI note at which the synths are tuned the same.
- If you are transposing from one drum machine to another, you may need a 128 to 128 note scale so that edits aren't repeated every octave.
- If you want to collapse several notes to one pitch, select the notes you want to become identical and use a destination size of 0 notes.
- If you want to invert a part, use a 128 to -128 note scale, starting at the note that you want to invert about.

Map Scroll Box

The Map scroll box displays what each note will be transposed to. The arrows show the scale degrees that are affected—no arrow means the note is not included in the chosen scale. Vision automatically updates this map when you change the transpose settings.

To edit this map, highlight a destination note (the right column) and play a new note on your MIDI controller. When you are editing a scale of less than 128 notes, any change you make in one octave will automatically occur in all other octaves.

Saving and Selecting Maps

If you want to save a transposition map, name it then click the **Store** button. Then, you can click the **Select** button to open a dialog that shows transpositions you have saved.

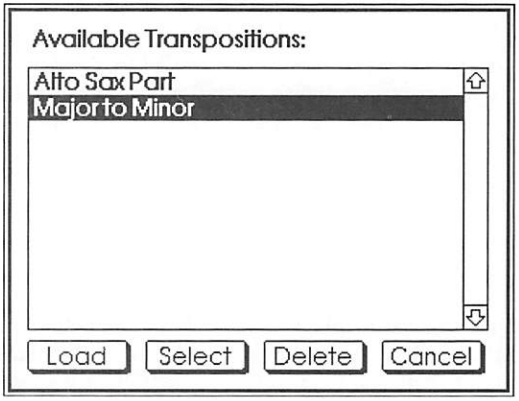


Figure 28.7: Available Transpositions Dialog

From here, you can load in more maps from another file, delete any select maps, select the map, or cancel without replacing the current transposition.

Transpose Maps do not need to be stored with sequence files. It's best to store all your transpose maps in your Vision Setup file—this will keep all maps together, and avoids the need for multiple copies. See "Vision Setup" on page 127 for more information.

Quantize ⌘-G

Choosing this command will quantize the current selection according to the parameters set in the Quantize window. See *Chapter 6: Quantization* and *Chapter 19: The Quantize Window* for more information.

❑ Modify Notes ⌘-Y

Choosing this command will open the Modify Notes dialog. This is a powerful dialog box that allows you to change all the notes in the selection.

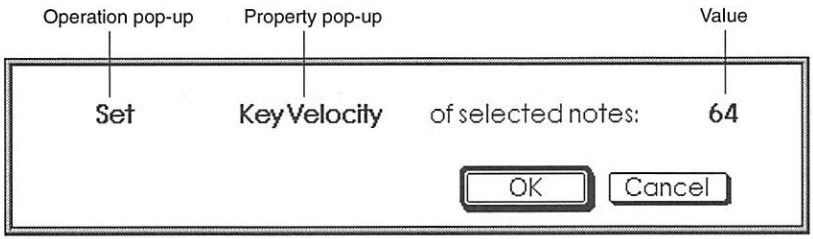


Figure 28.8: Modify Notes Dialog

Operation Pop-up

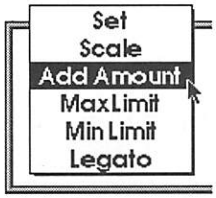


Figure 28.9: Operation Pop-up

This pop-up will determine *how* you will modify the current selection. Briefly, here is a description of each type of modification:

- Set

  This will change the chosen property (i.e., velocity, release velocity, or duration) of each selected note to the value you define.
- Scale

  Use this to change the property as a percentage of the original value.
- Add Amount

  This will add the value to the current value.
- Max Limit

  If current values are above the value you define, they will be decreased to match the new value.

- Min Limit

  If current values are below the value you define, they will be increased to match the new value.
- Legato

  This is only available when the property is set to duration. This will modify the duration size as a percentage of the note size.

All of the operations available in this pop-up are also available in the Strip Chart. Using this dialog is similar to using the Strip Chart with the **Flat Shape** selected. For complete information on these operations, see "The Variable Pop-up (Modify)" on page 67.

Property Pop-up

Figure 28.10: Property pop-up

This pop-up determines *what* you will modify about the current selection. You can modify both types of velocity, or the duration.

These properties are also available in the Strip Chart. For complete information on each property, see "Duration" on page 72 and "Velocity" on page 72.

Value

This field determines *how much* the property will change when you click OK.

Depending on the operation and property, the Value data will be different.

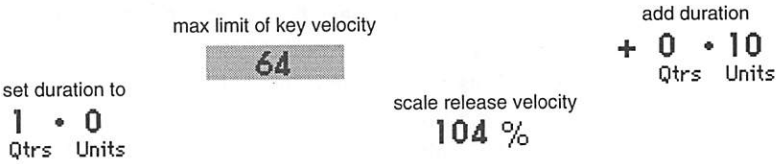


Figure 28.11: Some examples of possible value settings

❑ Set Instrument ⌘-I

This command will open the Set Instruments dialog. Use this dialog to set the instrument for selected events, or to set the default instrument for new events.

Setting Instruments to Selected Events

If you select events before choosing this command, you can choose a new instrument from the Instruments pop-up in this dialog. This will set the instrument for the selected events.

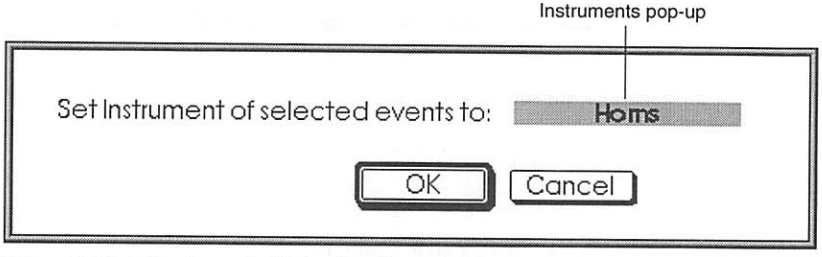


Figure 28.12: Set Instruments Dialog for selected events

Setting the Default Instrument

If you don't select events before choosing this command, you can choose a new instrument from the Instruments pop-up in this dialog. This will set the default instrument for new events.

Figure 28.13: Set Instrument Dialog for new events

This dialog will also open automatically when you have not specified which instrument to insert events on. For example, in the Strip Chart, you may see this dialog when you insert controller events in a track that contains more than one instrument.

❑ Reassign (option-Y)

Choosing this command will open the Reassign Dialog

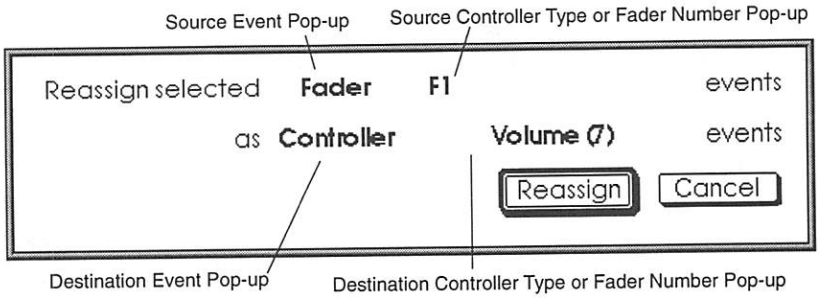


Figure 28.14: Reassign Dialog

Use this dialog to change controllers, pitch bends, aftertouch events, or fader events in the current selection into another type.

To set up the reassignment:

1. **Choose an event from the Source Event pop-up:**

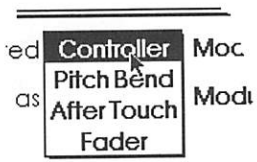


Figure 28.15: Source-event pop-up

2. **If you have chosen Controller, you also need to specify the Controller type in the Controller Type pop-up.**

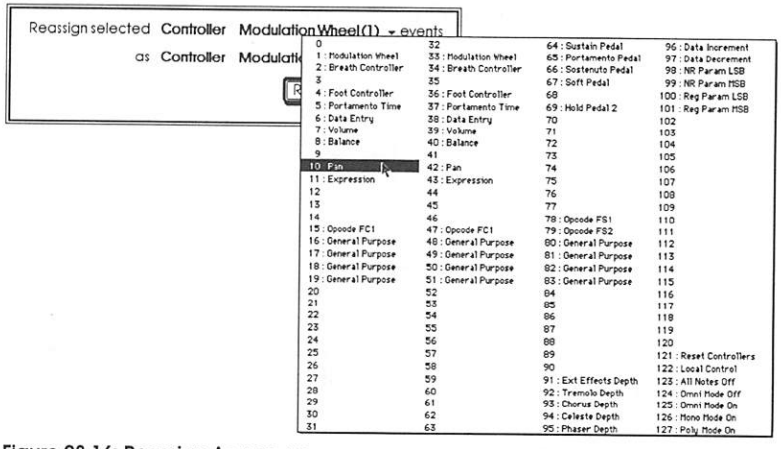


Figure 28.16: Reassign As pop-up

3. **If you have chosen Fader, you also need to set the fader number.**

Figure 28.17: Setting the fader number

4. **Repeat these operations for both Destination Pop-ups.**
5. **Click OK.**

Vision will search the current selection for all occurrences of events you defined as the source, then reassign them as the events you defined as the destination.

For example, if you have recorded fader events, you can reassign your fader movements to MIDI Volume events. First, select the track you want to change, then follow the instructions above to set the dialog with the same settings as Figure 28.14 on page 338. With these settings, you will reassign your fader movements to Volume events.

❑ Substitute

Choosing this command will open the Substitute dialog.

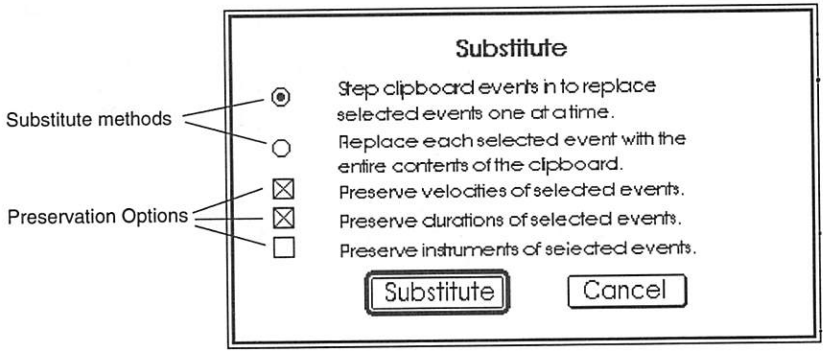

Substitute
Substitute methods
Step clipboard events in to replace selected events one at a time.
Replace each selected event with the entire contents of the clipboard.
Preservation Options
Preserve velocities of selected events.
Preserve durations of selected events.
Preserve instruments of selected events.
Substitute
Cancel

Figure 28.18: Substitute Dialog

Substitute Methods

The two radio buttons determine how the Clipboard contents will replace the current selection. If you select the top radio button, Vision will replace each event in the current selection with a one-to-one correspondence to each event on the clipboard:

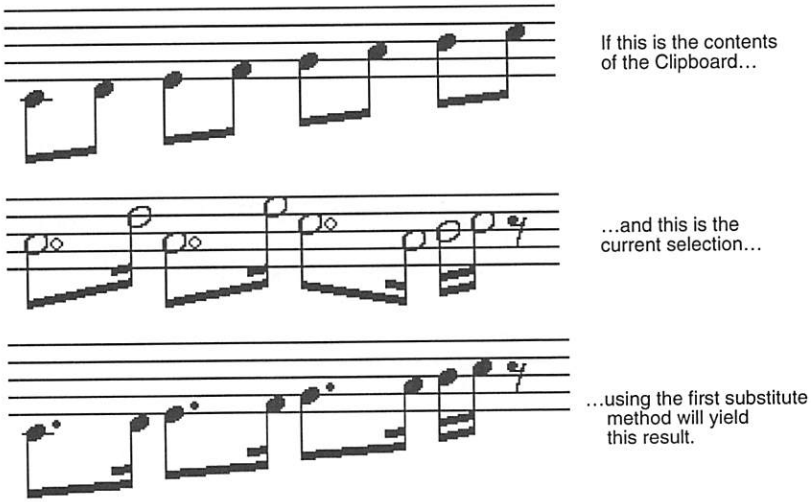

If this is the contents of the Clipboard...
...and this is the current selection...
...using the first substitute method will yield this result.

Figure 28.19: Results of the first Substitute method

If the you select the second radio button, Vision will replace each event in the current selection with the entire contents of the clipboard. Notice that Vision will not transpose the Clipboard contents to match the selection it's replacing.

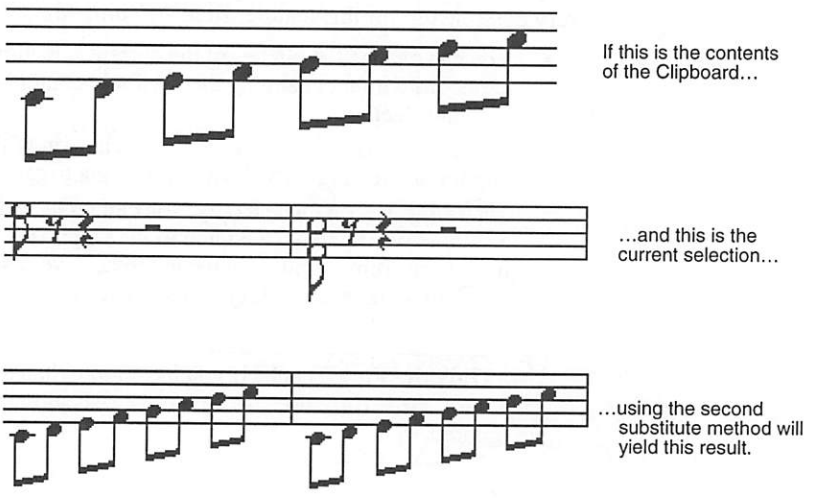

If this is the contents of the Clipboard...
...and this is the current selection...
...using the second substitute method will yield this result.

Figure 28.20: Results of the second Substitute method

Preservation Options

You can choose to preserve three aspects of the current selection:

- durations
- velocities
- instruments

For each box you check, Vision will retain the appropriate property in the current selection.

Substitute Ideas

You can use the Substitute dialog to replace the current selection with the Clipboard contents. This is extremely powerful—it would be impossible to outline every possible use for this feature. Here are some suggestions and possibilities:

- You can change the pitches of the current selection to the pitches on the clipboard without changing the rhythmic content of the current selection.
- You can substitute every note in the selection with the contents of the clipboard, creating "riffs" without using a trigger.
- For Studio Vision owners only, you can replace all selected events with an audio event you have copied to the Clipboard. This is especially useful for drum sounds—you can replace every snare drum MIDI trigger with a digital recording of a snare drum.

Uses Only the First Track: If you have more than one track on the Clipboard, **Substitute** uses the first track. All subsequent tracks are ignored.

❑ Copy Programs (option-C)

This command takes the last program change event that was sent to each instrument in the current sequence and places a copy of it on the Clipboard. If more than 16 instruments are used by a sequence, the clipboard will contain more than one track. This is helpful when making a program track for a sequence:

1. **With the Tracks window active, select an empty track.**
   You can also select an existing obsolete program track—this track will be replaced by program change events.
2. **Choose Copy Programs from the Do menu (or type Option-C).**
3. **Choose Paste Track from the Edit menu (or type Command-V).**

❑ Reverse Time

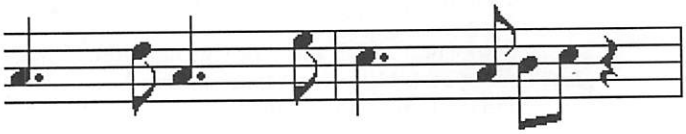
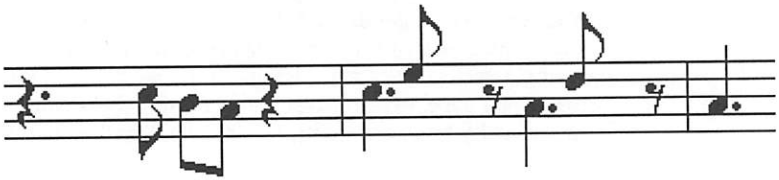
This command will reverse the order of the current selection. This results in a "retrograde" effect, which can be a helpful tool for composition. Notice that this does not sound the same as playing a sound recording backwards, because this command only affects MIDI events, not the sound of the instruments.

Before using Reverse Time

After using Reverse Time

Figure 28.21: Using Reverse Time

❑ Scale Time

Choosing this command will open the Scale Time dialog.

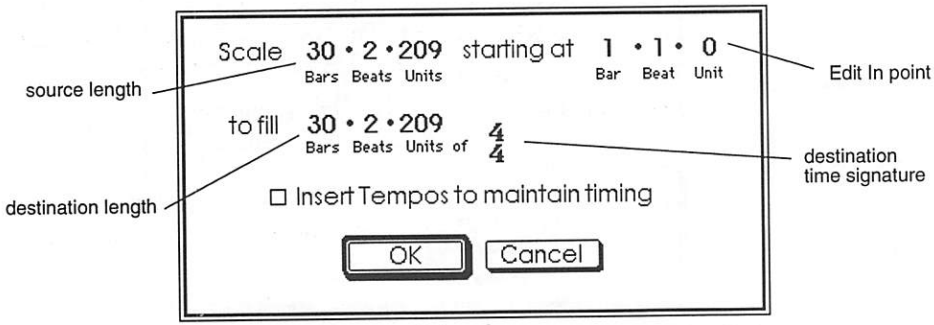

Scale 30 • 2 • 209 starting at 1 • 1 • 0
Bars Beats Units
Bar Beat Unit
source length
Edit In point
to fill 30 • 2 • 209 4/4
Bars Beats Units of
destination time signature
destination length
Insert Tempos to maintain timing
OK
Cancel

Figure 28.22: Scale Time Dialog

This dialog allows you to compress or expand the current time selection. This affects all events in all selected tracks, even if you don't have the events selected. To scale time in an entire sequence, use the Track Overview area of the Tracks window to define the time selection.

Vision uses the current selection to automatically set the source length and Edit In point. You can change the current selection directly from this dialog box by changing either of these parameters manually.

Set the destination length and time signature, then Click OK. The length and placement of each MIDI event in the selected time range will be uniformly changed to conform to the destination length.

Check **Insert Tempos to maintain timing** if you want Vision to automatically insert tempo changes at the Edit In point and Edit Out point so that the music will sound exactly the same as you recorded it. This is helpful when you are editing a performance recorded in "free time." See "Editing a Rubato Performance" on page 50 for instructions on using this feature. You can also scale time visually by using the ruler—see "Scaling Time in the Ruler" on page 52.

❑ Change Tempo (option-')

Choosing this menu item will open the Change Tempo dialog.

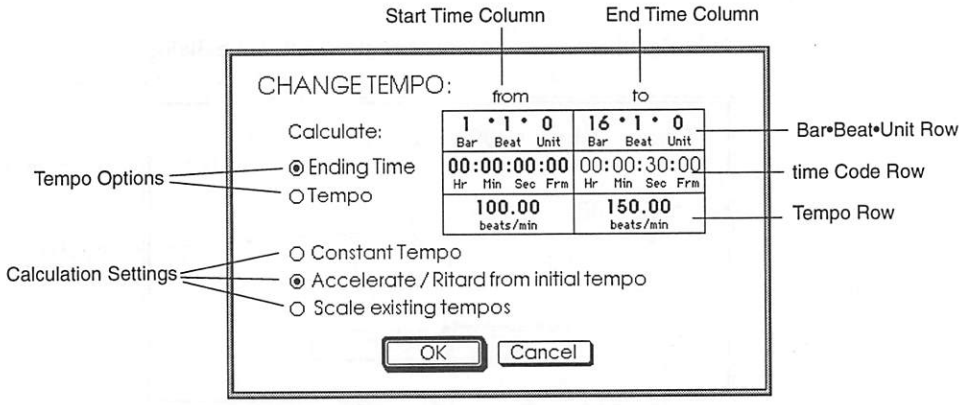


Figure 28.23: Change Tempo Dialog

Use this dialog to:

- create a smooth tempo change between the Edit In and Edit Out points.
- change the tempo so that the current selection plays for a specific amount of time.

You can use the Strip Chart to visually add a tempo change. If you are using Exact Mode, this dialog will automatically open when you add a tempo change (see "Changing the Tempo in Exact Mode" on page 60).

Start Time and End Time Columns

When this dialog first opens, the current selection will be shown in these columns.

Bar•Beat•Unit Row

This column shows the current selection Edit Points in Bars•Beats•Units format. You can change the MIDI data that will be affected by the tempo change by changing either of these values.

Time Code Row

This shows how long the current selection will play. If the Tempo radio button is selected, you can edit the ending time. This is especially helpful with composers who work with video or film, because you can force the current selection to play for an exact amount of time.

Tempo Row

This shows either the tempo of the selection, the average tempo of the selection, or the source tempo and destination tempo of the selection.

Tempo Options

Ending Time

With this radio button selected, Vision will calculate the ending time of the current selection. You can edit the Tempo.

Tempo

With this radio button selected, Vision will calculate the tempo of the current selection. Depending on the calculation setting, Vision will calculate the tempo, ending tempo, or average tempo of the selection.

When this radio button is selected, you can edit the Ending Time.

Calculation Settings

Constant Tempo

With this setting, Vision will force the selection to play at the same tempo. This setting is useful if you have a lot of tempo changes (which can happen when you use re-clock or external sync)—it will average out the tempo and erase all the tempo changes within the current selection.

Do not use this setting if there are tempo settings in the selection that you want to keep relative to one another. Use **Scale Existing Tempos.**

Accelerate/Ritard from Initial Tempo

When you use this setting, Vision will create a series of linear (smooth) tempo changes between the Start Time and End Time.

Scale Existing Tempos

If there are already tempo changes in the current selection, you may want to use this setting—it changes the tempo of the selection to fit into the times you set, but keeps the relative tempo information while it changes the overall tempo. Use this setting if you want to keep relative tempo changes, but increase the speed of the entire selection.

❑ Reclock

Choosing **Reclock** will open the Reclock dialog.

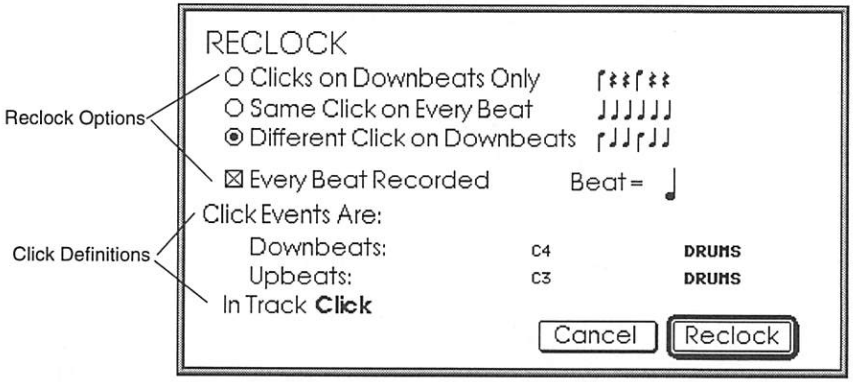


Figure 28.24: Reclock Dialog

The Reclock command is useful for taking a sequence recorded without a metronome or from an audio source, and making it conform to bars and beats. To do this, you must create a click track (i.e., a track that contains only events that indicate where the beats are). Reclocking scales the time of all tracks in the sequence so that the click events end up as exact bars and beats. It also modifies the tempo track so that the way the sequence plays back is unchanged.

You can use material already in the sequence to form the click track, or you can record a click track while listening to the sequence. You can edit the click track as much as necessary before reclocking.

For step-by-step instructions on using the **Reclock** command, see "Re-clocking to a Click Track" on page 56.

Reclock Options

Clicks on Downbeats Only

Instead of recording every beat, you can just record the first beat of each measure. If you do this, check this option. The number of beats in each measure is determined by the current meter of the first bar of the sequence (All other meter events are ignored). The advantage of this option is that you don't have to record as many clicks.

Same Click on Every Beat

For maximum tempo expressiveness, you can record a click event on every beat.

If **Every Beat Recorded** is checked, Vision assumes you have recorded a click event for each beat (or each bar) in the sequence. This allows dramatic, quick tempo changes.

If this is unchecked, you don't need to have a click event for every beat in the sequence (though you must have a click event for the first two beats, so Vision can establish the initial tempo).

Different Click on Downbeats

If your sequence has different meters, you can have Vision automatically create a meter track from your click events. In this mode, you must use two click events: one for the first beat of every measure, and a different one for all of the other beats.

Click Events

All click events must be in the same track. If you're not using the "Different Click on Downbeats" option, then you have two choices. You can specify that one particular note (or controller pedal or audio event) on a particular instrument is a click event, which is convenient when there are other events in the same track which are not click events. This is preset as the first appropriate selected event in the track; to change it, click on it and play the desired event (note or controller) on your MIDI keyboard. Or, you can choose "Any Note Event" which interprets all notes in the track as click events, which is convenient when you make a click track from the existing notes: it saves you from having to transpose them all to the same note.

If you are using "Different Click on Downbeats", you must specify two different events for your downbeats (beat 1 of each bar) and upbeats (all the rest). The first selected event in the track is preset as the downbeat event, and the second selected event is preset as the upbeat event.

❑ Insert Bar Marker ⌘-'

Choosing this command will open the Meter Track list window and puts a bar marker at the current counter location (not necessarily the Edit In point). In this window, you can name the marker.

This marker will appear in the Markers pop-up on the Control Bar and in the Track Overview ruler.

For more information on markers, see "Marker Pop-up" on page 156.

❑ Insert SMPTE Marker ⌘-;

Choosing this command will open the Meter Track list window and puts a SMPTE marker at the current counter location (not necessarily the Edit In point). In this window, you can name the marker.

This marker will appear in the Markers pop-up on the Control Bar and in the Track Overview ruler.

SMPTE Markers retain their SMPTE times, even if you change the tempo or SMPTE offset of the sequence using any method. However, they will move if you use Move Events—they are not "locked."

❑ Play from Selection ⌘-space

This command will play the current track or sequence starting with the current selection. This will change depending on what you have selected.

- If the current selection is a sequence, Vision will play from the sequence start time until the end of the sequence.
- If the current selection is a track, Vision will play from the track start time until the end of the track.
- If the current selection is a range of MIDI data, Vision will play from the Edit In point to the end of the track.

Of course, you can manually stop or pause playback at any time.

❑ Play Selection (option-space)

This plays only selected events in the current sequence from the Edit In point to the Edit Out point, then stops.

❑ The Select Submenu

This submenu allows you to define the current selection according to rules you specify.

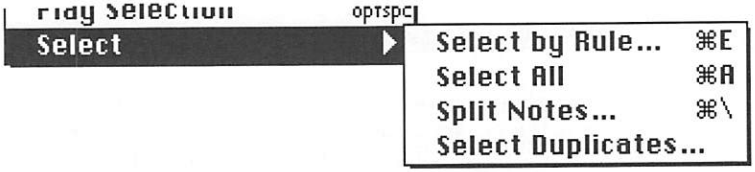


Figure 28.25: Select Submenu

Select by Rule ⌘-E

This opens a powerful dialog that allows you to set up extensive rules in defining the current selection.

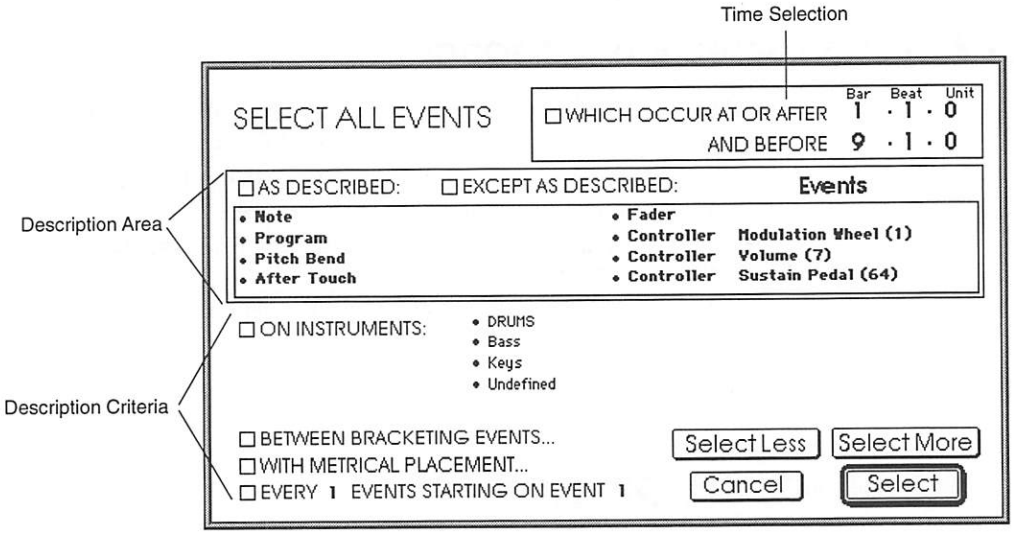
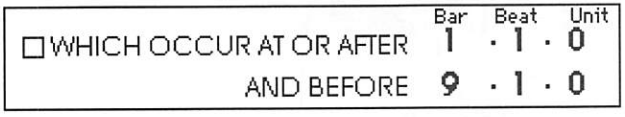


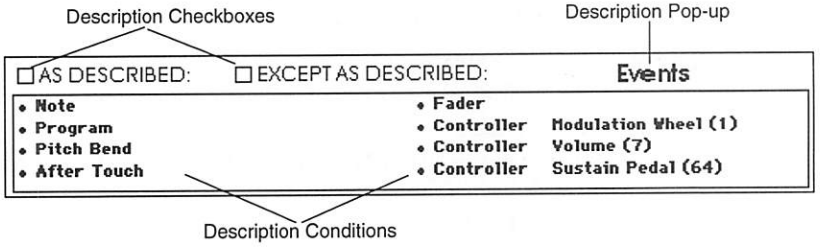
Figure 28.26: Select by Rule Dialog

Time Selection



This area allows you to set the time period that will be selected. Whatever you last entered for a time range in this dialog will appear the next time you open the dialog box.

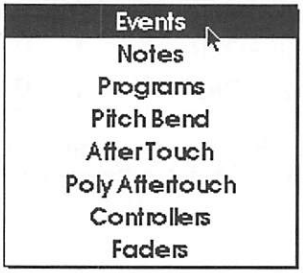
Description Area



Description Checkboxes

When you check one of these boxes, the other one becomes unchecked. Using these checkboxes, you can tell Vision to either include or exclude the information in the description conditions in the selection criteria.

Description Pop-up



This pop-up will let you define the selection criteria. It will change the contents of the description conditions.

- **Events**
  Describe up to eight different event types.
- **Notes**
  Further describe the note selection based on note number (pitch), velocity, and duration.
- **Programs**
  Describe a range of programs, or a single program to select.
- **Pitch Bend**
  Search for specific Pitch Bend events.
- **Aftertouch**
  Search for specific aftertouch events.
- **Poly Aftertouch**
  Search for specific aftertouch events based on amount or note number.
- **Controllers**
  Describe specific continuous controller events.
- **Faders**
  Describe fader events and values.

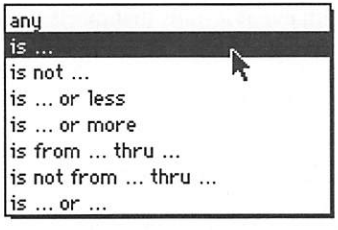
Description Conditions

This area will change depending on the item you have selected in the Description Pop-up (above). This area allows you to limit the selection criteria with potentially very narrow precision.

You can select event types by clicking on their selection dots. You can change event types by clicking on them and choosing a new type from the pop-up that appears.

You can also define the selection criteria by setting conditional statements. Here are some possibilities of using the conditional statements.

- **any** (default)
  includes any event of this type
- **is**
  includes events only if they have a value you define
- **is not**
  includes events if their value is anything except the value.
- **is... or less**
  includes events equal or less than a certain value
- **is... or more**
  includes events equal or more than a certain value
- **is from ... thru**
  includes a range of events
- **is not from ... thru**
  exclude a range of events
- **is ... or**
  include two different values to search for



Selection Criteria

Instrument Selection

This area allows you to restrict the selection to events occurring on certain instruments. Click the selector dot for each instrument you wish to include in the new selection. This area will only be in this dialog if there is more than one instrument in the current selection.

Between Bracketing Events

This allows you to select events that occur between other events. For example, you can select all notes that were recorded with the sustain pedal down. To accomplish this:

1. **Set the main description to Notes.**
2. **Set the top bracketing event to Controllers, Control Number Sustain Pedal, with an amount of 64 or greater.**
3. **Set the bottom bracketing event to the same Controller with an amount of 63 or less.**

Metrical Placement

This allows you to select notes based on their relationship to the downbeat. You can draw a range of time relative to either beat lines or bar lines (or you can type in a range). This is useful if you want to quantize only events that fall at the beginning or end of a beat.

Select Some Events

With this item checked, Vision may only select some of the events that meet the criteria. For example, if you check this dialog and set the criteria to read, "Select every 2 events starting at event 6" Vision will select every other event starting with the 6th event it finds that meets the other selection criteria.

With this item unchecked, Vision will select every event that meets the criteria in other parts of the dialog.

Select Less and Select More Buttons

These buttons perform the following tasks:

- Select Less

  If you click this button, the dialog box will close and Vision will only select events that were already selected and that also match the description.
- Select More

  If you click this button, the dialog box will close and Vision will add events that match the description to events that were already selected.

Select All ⌘-A

If the Sequences window is active, all sequences are selected.

If an Edit window is active (including a Tracks window in Track Overview mode), this command selects all events and sets the Edit In and Edit Out point to the length of the sequence.

If a Tracks window in Tracks mode is active, this command selects all recorded tracks. For more information on the distinction between Tracks mode and Track Overview mode, see "Two Windows in One" on page 180.

Split Notes ⌘-\

Opens a dialog which allows you to select notes based on their harmonic position.

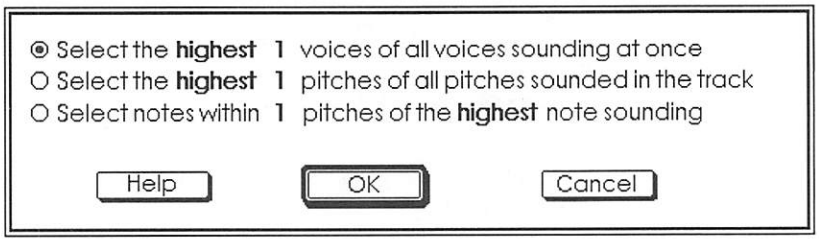

Select the highest 1 voices of all voices sounding at once
Select the highest 1 pitches of all pitches sounded in the track
Select notes within 1 pitches of the highest note sounding
Help
OK
Cancel

Figure 28.27: Select Notes Dialog

There are three ways to split notes:

- Highest or Lowest Number of Voices of All Voices Sounding at Once
  The highest or lowest notes of a chord will be selected (e.g., the highest two voices of all the chords in a track). You could use this to extract parts.
- Highest or Lowest Number of All Pitches Sounded in the Track
  You could use this to split out drum pitches, one or more at a time.
- Notes Within a range of the Highest or Lowest Note Sounding
  This selects within a specified range of the highest or lowest note. You could use this to select all notes played with the right hand.

Select Duplicates

Use this command to recover from the rare situation in which, for some reason, you have ended up with a track with two of every event on it. Usually the events will occur at the same time and have the same value, but if they are separated by a few ticks, set the "units" field to a number slightly greater than 0. If the "%" field is not 0, then you can select events which do not exactly match each other in all respects.

You may not be able to see the selected events in a graphic window because they are covered up by their twin events. Nevertheless, if you choose Cut or Clear from the Edit menu, they will go away.

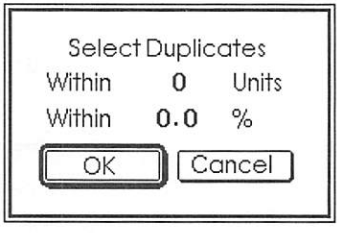


Figure 28.28: Select Duplicates Dialog

This is good when you accidentally record a track with a layered MIDI channel.

CHAPTER 29: The Setups Menu

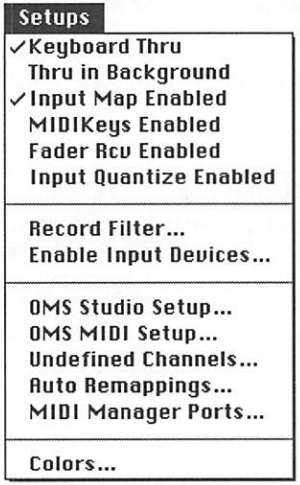


Figure 29.1: The Setups Menu

❑ Keyboard Thru

This menu item is a toggle. If **Keyboard Thru** is checked, Vision will send all MIDI events it receives to the Current Instrument's device and channel. If an Input Map is being used, Vision will also send MIDI events which are mapped to other Instruments.

If **Keyboard Thru** is unchecked, Vision will send MIDI only when it's playing.

❑ Thru in Background

This menu item is a toggle. When **Thru in Background is** checked, Vision will continue to send MIDI events it receives through the Current Instrument when you are using a different Macintosh application. If it is unchecked, Vision will suspend "Thruing" until you bring Vision to the front.

For this item to be available, **Keyboard Thru** must be checked (above). Also, the OMS MIDI Setup dialog must be set to **Only OMS Applications** or **Use Apple MIDI Manager** (see page 362).

❑ Input Map Enabled

This menu item is a toggle. If it is checked, the Input Map will function normally. If it is unchecked, Vision will not use the Input Map and all lines in the Input Map window will be grayed out.

You can also check and uncheck this item directly from the Input Map window menu.

Map Enable Troubleshooting Tip: There are three Map Enable toggles in the **Setups** menu—Input Map, Fader Receive, and MIDIKeys. If you are having trouble with your MIDI signal flow, try turning off one of these maps to see if Vision is interpreting your MIDI in a different way than you expect.

❑ MIDIKeys Enabled

This menu item is a toggle. If this is checked, the MIDIKeys will operate. If it is unchecked, MIDIKeys will not work. See *Chapter 22: The MIDIKeys Window*. You can check and uncheck this item directly from the MIDIKeys window menu.

❑ Fader Rcv Enabled

This menu item is a toggle. If this is checked, the faders in the Faders window (see page 275) can be controlled by an external MIDI source. If this isn't checked, external MIDI controllers will not affect the faders directly—but you can still control them manually or by fader events that were already recorded. You can check and uncheck this item directly from the Faders window menu.

❑ Input Quantize Enabled

When this is checked, Vision will quantize all performances as it records them. You can determine the quantize parameters in the Quantize window (see page 245), and you can change quantize parameters while you are recording.

When Input Quantize is checked (enabled), the Record Mode pop-up in the control bar will display a small note showing the quantize value.

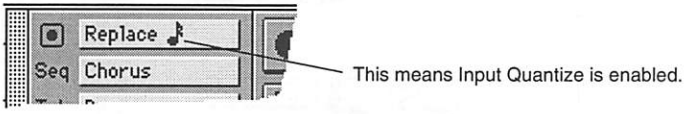


Figure 29.2: Input Quantize Indicator

This option is not available when you are using Groove Quantize.

❑ Record Filter

This will open the Record Filter dialog, where you can determine which types of data you wish to record.

Figure 29.3: Record Filter Dialog

Use the three radio buttons to tell Vision whether you want to record all events, only the events you have selected in this dialog, or all events that have *not* been selected in this dialog.

Unless you choose **All,** you need to check the selected event types in the checkboxes provided.

You can select up to eight continuous controllers—if you wish to select one that isn't shown, you can choose from a pop-up by clicking the bold name of a listed controller.

❑ Enable Input Devices

Choosing this menu item will open the Enable Input Dialog:

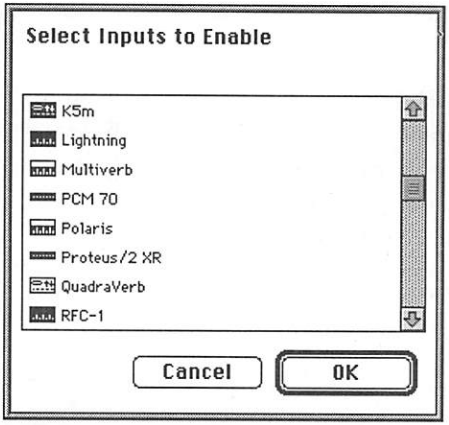


Figure 29.4: Enable Input Dialog

Use this dialog to enable the devices you will use for MIDI input. Vision will only listen to MIDI from the sources that are selected in this dialog box.

Select the device icons you wish to enable, then click OK. If you wish to leave the dialog unaffected, click Cancel.

If multiple devices are connected to the same port of a standard MIDI interface, all devices on that port will appear on the same line and all of them will be selected.

Even if you disable a MIDI source as an Input, you can still define it as a sync source.

❑ OMS Studio Setup

Choosing this starts up (or switches to) the OMS Setup application, and opens your current Studio Setup document. There, you can make any changes and return to Vision.

❑ OMS MIDI Setup

This command will open the OMS MIDI Setup dialog.

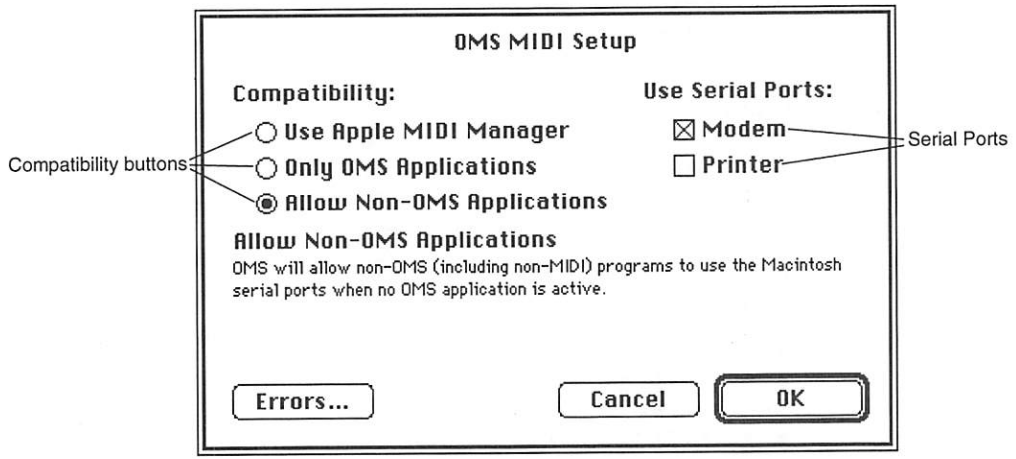


Figure 29.5: OMS MIDI Setup Dialog

Compatibility Buttons

Use Apple MIDI Manager

Select **Use Apple MIDI Manager** when all programs are either OMS programs or MIDI Manager-compatible. In this mode, Vision can continue to play or record while you use another program. MIDI Manager allows any number of programs to share timing resources.

Only OMS Applications

Use **Only OMS Applications** mode when you aren't using any MIDI programs that aren't compatible with OMS. In this mode, Vision won't stop playing or recording when you switch to another program, and, if **Keyboard Thru in Background** is checked, it will continue thruing as well. However, only one program can use the timing resources at a time, and Vision will stop playing if another program claims them.

Allow Non-OMS Applications

Allow Non-OMS Applications causes Vision and all other OMS programs to stop playing, receiving, and sending MIDI whenever you activate another program, because that other program might use the Macintosh's timing and serial port resources in an incompatible way.

Serial Port Checkboxes

You should check the port(s) that you will be using to send and receive MIDI data.

Errors Button

If you click the errors button, Vision will provide a report of serial errors that have occurred since you installed Vision.

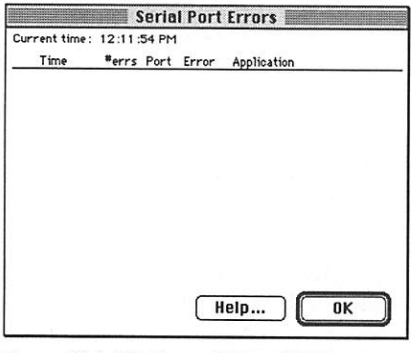


Figure 29.6: What we all hope to see—an empty errors window

❑ Undefined Channels

Choosing this command opens the Undefined Channels dialog. This dialog will also automatically open when Vision senses a file that refers to channels that are not defined in your current Studio Setup document.

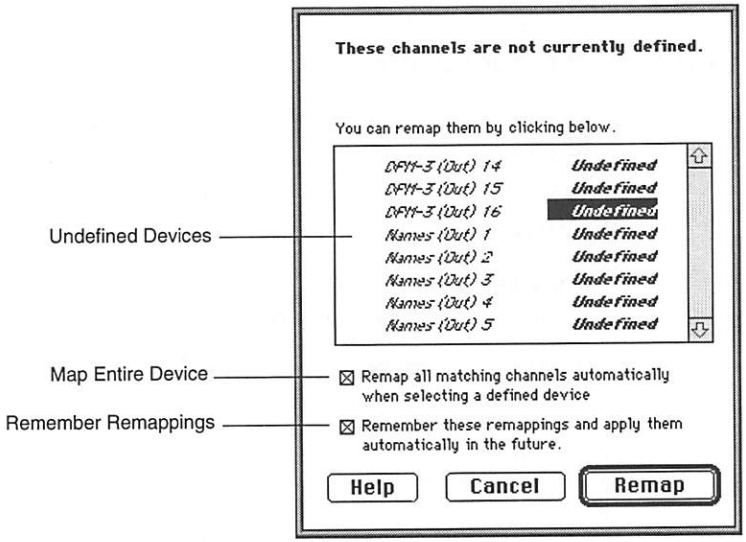

These channels are not currently defined.
You can remap them by clicking below.
DFH-3 (Out) 14 Undefined
DFH-3 (Out) 15 Undefined
DFH-3 (Out) 16 Undefined
Names (Out) 1 Undefined
Names (Out) 2 Undefined
Names (Out) 3 Undefined
Names (Out) 4 Undefined
Names (Out) 5 Undefined
Undefined Devices
Map Entire Device
Remember Remappings
Remap all matching channels automatically when selecting a defined device
Remember these remappings and apply them automatically in the future.
Help
Cancel
Remap

Figure 29.7: Undefined Channels Dialog

The list of undefined devices appear in italics in the left column. If you want to hear any tracks assigned to these devices, you must remap them.

To remap an undefined device, simply choose from the device pop-up that appears when you click a right column item (e.g., the word "Undefined").

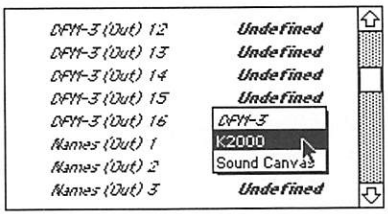


Figure 29.8: Device pop-up

When the **Map Entire Device** box is checked, all remappings will be automatically applied to each line with the same device. This saves you from needing to remap each channel in a device individually.

When the **Remember Remappings** box is checked, Vision will save the remappings you define here, and automatically apply them when it encounters the same undefined channels. This is automatically saved to your Studio Setup document. You can edit memorized remappings in the Auto Remappings dialog (below).

The remappings that you set in this dialog affect Input Maps, Fader Receive, MIDIKeys, Instruments (or any item that may contain an Instrument) and Names files.

❑ Auto Remappings

This command will open the Auto Remappings dialog. Use this dialog to edit the remappings stored in the current Studio Setup document.

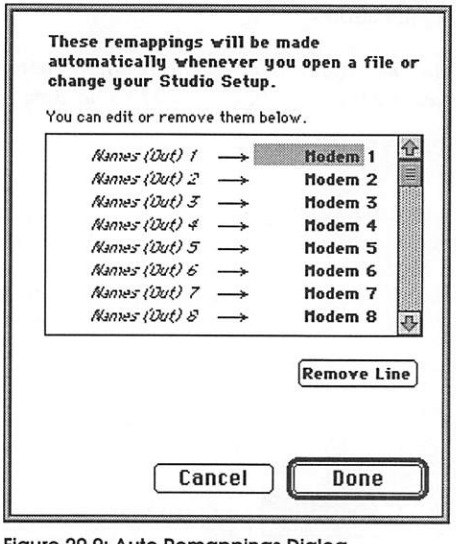

These remappings will be made automatically whenever you open a file or change your Studio Setup.
You can edit or remove them below.
Names (Out) 1 → Modem 1
Names (Out) 2 → Modem 2
Names (Out) 3 → Modem 3
Names (Out) 4 → Modem 4
Names (Out) 5 → Modem 5
Names (Out) 6 → Modem 6
Names (Out) 7 → Modem 7
Names (Out) 8 → Modem 8
Remove Line
Cancel
Done

Figure 29.9: Auto Remappings Dialog

Vision will automatically save any changes you make in this dialog in the Studio Setup document. When you open any Vision file that references undefined devices, the remappings will be applied automatically.

The left side of the scroll box is the list of undefined input or output devices. The right side contains a list of defined devices into which the undefined devices will map. To edit a remapping:

1. **Click the defined device name in the right column to open a pop-up menu of you current Studio Setup document devices.**
2. **Choose a new device from the pop-up.**
3. **Choose a device channel from the pop-up.**

Each Studio Setup document stores its own set of auto remappings. This is convenient if you regularly transfer files between two or more different studios with different synthesizer selections.

To delete a remapping, select it and click the **Remove Line** button.

❑ MIDI Manager Ports

This command will open the MIDI Manager Ports dialog. Use this dialog to create and name the MIDI Manager ports that appear with the Vision icon in the PatchBay application.

You may create up to four input ports and eight output ports. A port is created simply by typing a name into the port box. To delete a port, clear the name.

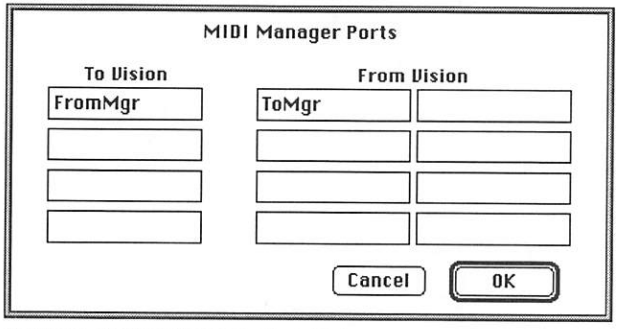


Figure 29.10: MIDI Manager Ports Dialog

If you are set to **Use Apple MIDI Manager** in the OMS MIDI Setup dialog (see page 362), then output ports are available in the Instruments window, and input ports are available in the Input Map window and Faders window.

❑ Colors

This command opens a dialog that allows you to modify the display colors used by the MIDI instruments.

CHAPTER 30: The Options Menu

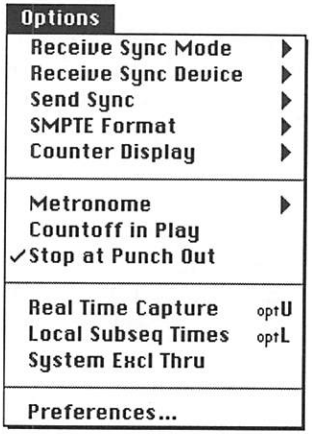


Figure 30.1: The Options Menu

❑ Receive Sync Mode

Use this submenu to define the type of receive sync that Vision will use.

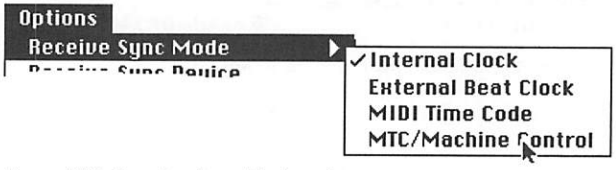


Figure 30.2: Receive Sync Mode submenu

Internal Clock

In this mode, Vision uses the sync clock of the Macintosh. Sequences will play at their own tempo.

External Beat Clock

In this mode, Vision uses the sync from an external source, usually the beat clock from hardware-based sequencers. If the external timing source contains song pointer information, it will also control the Vision counter. Use this option if you're syncing Vision to an external MIDI sequencer (or drum machine) that doesn't transmit SMPTE time code.

MIDI Time Code

Vision uses MIDI Time Code from SMPTE. This is usually from a tape track but could be from another application or MIDI device that sends MTC. Use this option with a SMPTE-to-MTC converter if you want to sync Vision to external SMPTE time code.

MTC/Machine Control

If you are using the OMS-AV driver, this option will appear. This will define the external sync controller as an MMC device. See "AV Controls for MIDI Machine Control" on page 387 for more information.

❑ Receive Sync Device

This submenu shows you a list of available sync sources. Choose an item from this list to make it the active sync source.

Figure 30.3: Receive Sync Device submenu

Vision receives all Song Pointer, MIDI Beat Clock, MIDI Time Code, or MIDI Machine Control messages from the Receive Sync device and ignores these messages from all other devices. Any devices that are defined as sending sync in the current Studio Setup will appear in the Receive Sync submenu.

❑ Send Sync

This submenu contains options and devices that tell Vision how and where to send Sync information.

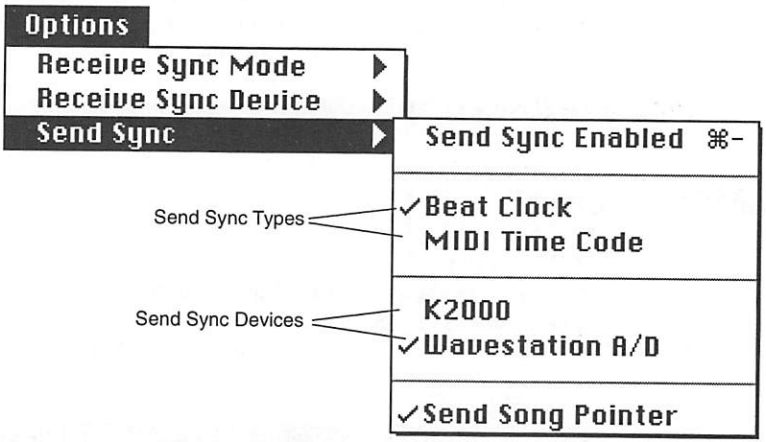


Figure 30.4: Send Sync submenu

Send Sync Enabled ⌘-dash

This menu item is a toggle. If it is checked, Vision will send sync to your external devices. If it is unchecked, Vision will not send sync information.

Send Sync Types

These are the types of Sync you can send when **Send Sync Enabled** is checked. You can only choose one of these at a time.

Send Sync Devices

This area of the **Send Sync** submenu will let you choose the outputs where you are sending sync. If no outputs are available, the words "No Outputs" will appear in this area.

Send Song Pointer

If your receiving device understands song pointer information and **Send Song Pointer** is checked (along with **Send Sync Enabled** and **Beat Clock**), it will then begin playing when you start the sequence, even if you start in the middle of a measure. If this item is unchecked, the external device will not begin playing until the next full measure.

Send Song Pointer is not available if you are sending MIDI Time Code.

❑ SMPTE Format

This submenu allows you to choose the SMPTE format Vision uses in all display and calculations. This format must match the format of the SMPTE time code which is on your tape. If you change the format, Vision will adjust the SMPTE offset frame number of all your sequences.

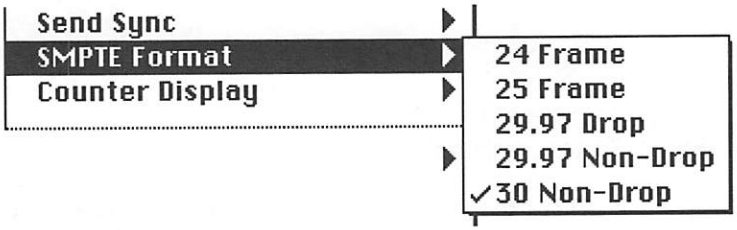


Figure 30.5: SMPTE Format submenu

Vision stores the SMPTE format with each Vision file, and will recompute the SMPTE start time (if it's different from the current format) when it reads the file. For more information on these formats, see "SMPTE Time Code Rates" on page 137.

Counter Display

The two items in this submenu allow you to set the format of the main counter display. You also can set the display by clicking the Counter Display toggle (↑). This will also set the counter to Bars • Beats • Units when it's displaying SMPTE, and vice-versa.

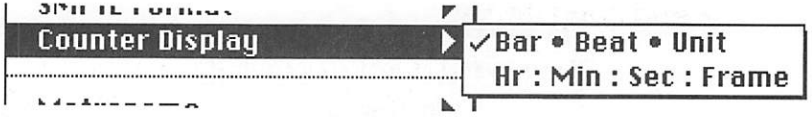


Figure 30.6: Counter Display submenu

Metronome

This submenu allows you to set up the Vision metronome.

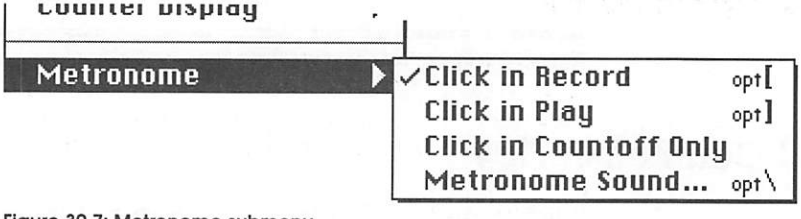


Figure 30.7: Metronome submenu

Click in Record (option-[)

This item is a toggle. Enable this option if you want the metronome to play while you record.

Click in Play (option-])

This item is a toggle. Enable this option if you want the metronome to play when Vision plays.

Click in Countoff Only

This item is a toggle. Enable this option if you want the metronome to play only during countoff.

Metronome Sound (option-\)

This will open the Metronome Sound dialog where you can set the metronome sound. Here, you can define whether you want to hear the metronome as a MIDI note or click from the Macintosh speaker. For instructions on changing the metronome sound, see "Setting Your Own Metronome Sound" on page 131.

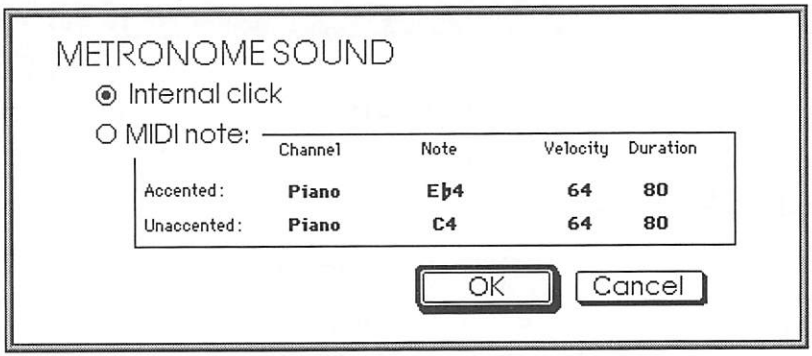


Figure 30.8: Metronome Sound Dialog

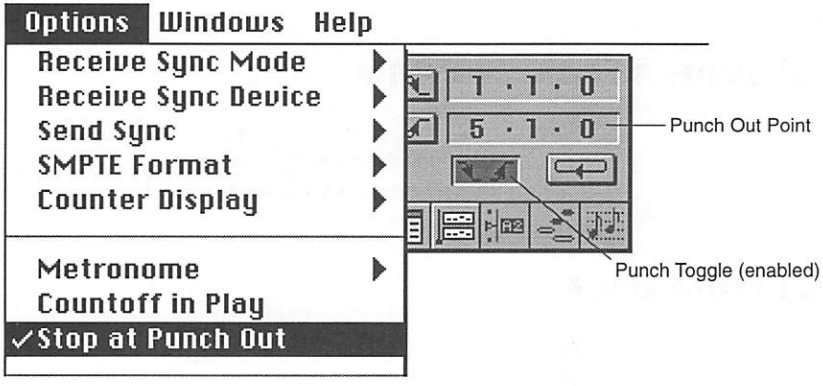
❑ Countoff in Play

This item is a toggle. If it is checked, Vision will play the countoff during recording and playing. If it is not checked, Vision will only play a countoff during recording.

This item is meaningless if the **Begin Record Toggle** is set to Wait for Note.

❑ Stop at Punch Out

If this item is checked, Vision will automatically stop at the Out Point if the Punch Toggle is enabled when recording.



❑ Real Time Capture (option-U)

The **Real Time Capture** command can be toggled on or off. Simply choose it to either enable real time capture (checked) or disable it (unchecked).

If you disable **Real Time Capture** and type sequence letters while a track records, the sequences will be recorded as subsequences.

If you enable **Real Time Capture** and type sequence letters while a track records, the sequences are played in real time and captured to the track. This allows you to record, in real time, any changes you make as that sequence plays (such as quantize values, track mutes and solos, or generated sequence parameters). Changes in the Instrument window will not be recorded.

❑ Local Subsequence Times (option-L)

This item is a toggle. If it is checked, editing windows for subsequence tracks will be numbered starting with Bar 1, as if they were a top-level sequence. They will play and record completely independently of the top-level sequence.

If **Local Subsequence Times** is not checked, the subsequence will be treated in the context of the top-level sequence. Editing windows will show the time that the subsequence starts in the top-level sequence. Playing or recording into the subsequence will also play the top-level sequence so you can hear the subsequence in context.

❑ System Exclusive Thru

This item is a toggle. If it is checked, Vision will send Sys-ex messages from your MIDI controller to any receiving devices. If it is not checked, Vision will receive this information but not pass it along.

❑ Preferences

This command opens the Preferences dialog which allows the setting of a few miscellaneous items:

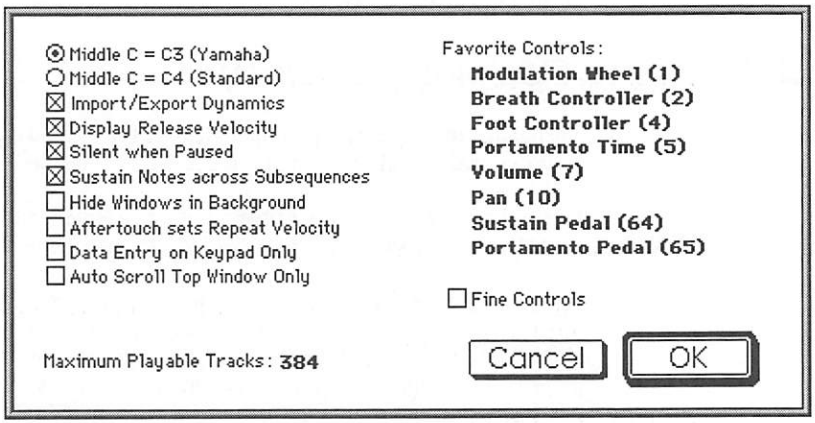


Figure 30.9: Preferences Dialog

Define Middle-C

These two radio buttons allow you to choose whether middle C (MIDI note number 60) is displayed as C3 or C4. For most instruments, this is C4. Yamaha instruments display middle C as C3.

Import/Export Dynamics

Allows the transcription process to include dynamic markings in the file.

Display Release Velocity

Shows the release velocity column in List windows.

Silent when Paused

Turns off all notes when Pause is selected. If this is disabled, all playing notes will be held, which you can use as a "fermata" effect—hold them as long as you can stand it!

Sustain Notes across Subsequences

Allows notes to play for their full duration, even when the subsequence they're in stops playing.

Hide Windows in Background

Causes all Vision windows to disappear when you switch to another application.

Aftertouch sets Repeat Velocity

Allows after touch to increase the velocity of notes played using the Repeat MIDIKey feature.

Data Entry on Keypad Only

Allows the number keys above the letters on the main section of the keyboard to be used only for locators (or Players).

Auto Scroll Top Window Only

Will restrict Auto Scroll to the top window. This can speed things up. If unchecked, all windows for a sequence which is playing will scroll.

Favorite Controls

Lets you choose the eight MIDI controllers you use the most often. These controllers will appear whenever a controller selection can be made.

Fine Controls

Displays MIDI controllers 0-31 as having a range of 0 to 16383, using MIDI controllers 32-63 to contain the "fine" information. Also, the strip chart will generate "fine" information. If not checked, all MIDI controllers are treated equally as having a range of 0 to 127.

Maximum Playable Tracks

This is the number of tracks which Vision can play simultaneously. Decreasing this number gives you more memory for editing and recording.

CHAPTER 31: The Windows Menu

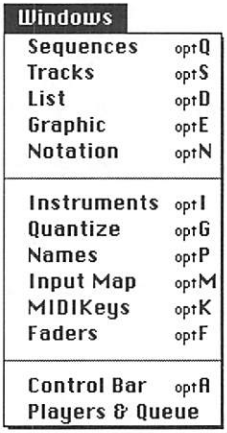


Figure 31.1: The Windows Menu

When you choose one of these menu items, the corresponding window will open (if it's not already open) and become the active window.

❑ Sequences Window (option-Q)

The Sequences window displays all the sequences in the current file. For more information, *Chapter 12: The Sequences Window* on page 161.

❑ Tracks Window (option-S)

The Tracks window shows you the tracks in the current sequence, and allows you to make global selections and edits.

There are two main areas of the Tracks window. In the Track Selection area (on the left), you can view and edit track properties. In Track Overview (the area on the right), you can select the MIDI events in any of the tracks.

For more information, see:

- *Chapter 13: Edit Window Common Features* on page 165.
- *Chapter 14: The Tracks Window* on page 179.

❑ List Window (option-D)

The list window shows you a chronological sequence of all the events in a track. You can list everything from musical notes to copyright notices, system exclusive data and lyrics. This information is displayed as text and numbers.

Choosing this command or clicking the List window icon will scroll the List window to display the selection.

For more information, see:

- *Chapter 13: Edit Window Common Features* on page 165.
- *Chapter 17: List Windows* on page 221.

❑ Graphic Window (option-E)

You can view and display your MIDI data in a "Piano Roll" format using a Graphic window. You can display only one track in a Graphic window, but you can display many Graphic windows at the same time.

Choosing this command or clicking the Graphic window icon will scroll the Graphic window to display the selection.

For more information, see:

- *Chapter 13: Edit Window Common Features* on page 165.
- *Chapter 15: Graphic Windows* on page 205.

❑ Notation Window (option-N)

Vision Notation windows display MIDI information using standard music notation. Vision interprets the MIDI information and displays it in a staff. Usually, each track will be represented by a single staff. You can view multiple tracks in this window, and you can open several Notation windows simultaneously. The contents of the Notation window will determine which tracks you will print.

Choosing this command or clicking the Notation window icon will scroll the Notation window to display the selection.

For more information, see:

- *Chapter 13: Edit Window Common Features* on page 165.
- *Chapter 16: Notation Windows* on page 211.
- "Notation Resolution" on page 91.
- "Shifting the Music by Octaves" on page 104.

❑ Instruments Window (option-I)

This window will give you access to all the settings for Vision Instruments. For more information, see *Chapter 18: The Instruments Window* on page 233.

❑ Quantize Window (option-G)

The Quantize window contains the parameters for the alignment grid when you execute a quantize command. For more information, see *Chapter 19: The Quantize Window* on page 245, or *Chapter 6: Quantization* on page 79.

❑ Names Window (option-P)

The Names window allows you to name your controllers, programs, devices, and notes. This way, when you make an edit in another part of Vision, you can refer to your program sounds as names, not just numbers. If you use Galaxy™, Opcode's Universal Librarian, you can subscribe to bundles that will be automatically updated whenever you change your sounds. For more information, see *Chapter 20: The Names Window* on page 253.

❑ Input Map Window (option-M)

The Input Map window allows you to assign each MIDI channel for each device to a different range, instrument, and/or sequence. For more information, see *Chapter 21: The Input Map Window* on page 259.

❑ MIDIKeys Window (option-K)

MIDIKeys allow you to virtually type any Macintosh key combination using a MIDI controller. For more information, see *Chapter 22: The MIDIKeys Window* on page 267.

❑ Faders Window (option-F)

Vision supports up to 32 faders. Each fader can be set to send any MIDI controller (other than pitch bend or aftertouch) or perform a velocity fade on any Instrument. One fader can be set to control the tempo. For more information, see *Chapter 23: The Faders Window* on page 275.

❑ Control Bar (option-A)

The Control Bar contains the major controls for Vision. It's normally located just below the Macintosh menu bar. For more information, see *Chapter 11: The Control Bar* on page 141.

❑ Players & Queue

This will show the Players & Queue window, which allows you to line up several sequences to play in a row, or play several sequences (up to 9) simultaneously. See *Chapter 24: Players & Queue* on page 281 for more information.

CHAPTER 32: The Help Menu

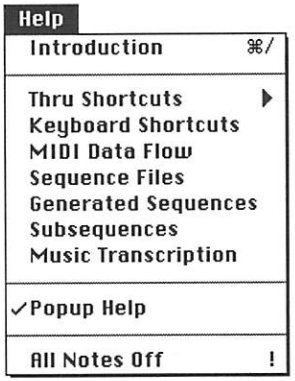


Figure 32.1: The Help Menu

❑ Introduction ⌘-/

Choosing this command displays some of your help options.

❑ Thru Shortcuts

Choose this command to display a submenu showing the Thru Instruments assigned to the ten command key equivalents.

❑ Keyboard Shortcuts

This command displays a diagram of Vision's control bar and its command key equivalents.

❑ MIDI Data Flow

Choose this command to display Vision's MIDI flow diagram.

❑ Sequence Files

Choose this command to display some basic information about Vision's file format, including how to save a Setup File, Instruments, Input Maps, MIDIKeys, Transpose maps, and Fader setups.

❑ Generated Sequences

This command displays some general information about generated sequences. When you have finished reading one window, click in the window to display the next page. For more information about generated sequences, "Generated Sequences" on page 196.

❑ Subsequences

This command displays general information about subsequences, for example, how to step record them into a sequence and how to chain them.

For more information about subsequences, see *Chapter 8: Understanding and Using Subsequences.*

❑ Music Transcription

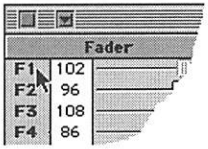
This tells you how to transcribe a sequence to DMCS or to Professional Composer.

❑ Popup Help

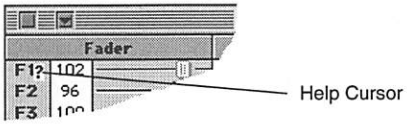
If you check this option, Vision's on-line help text will stay up on the screen until you click it or outside of it. If you don't check this option, the help text will remain on the screen only while you hold down the mouse.

Vision supports an extensive on-screen help system. To invoke on-screen help:

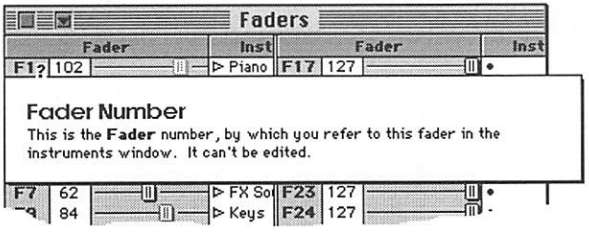
1. **Position the cursor over the area where you have a question.**



2. **Hold down the Command, Option, and Shift keys on your Macintosh keyboard.**
   The cursor will change into a question mark.



3. **Hold down the mouse button.**
   Vision will display the on-screen help.



❑ All Notes Off (!)

Choose this command to send a note-off message for all 128 notes on all Instruments. It also turns off all sustain pedals and centers pitch bend.

APPENDIX A: AV Controls for MIDI Machine Control

This appendix describes how to use AV Controls for MIDI Machine Control.

The term "MMC" is used to represent "MIDI Machine Control." The term "MTC" is used for "MIDI Time Code."

❑ Installing MIDI Machine Control

AV Controls is an application which provides real-time remote control of MIDI Machine Control (MMC) devices. The functions of AV Controls can also be accessed through Vision, allowing you to control a MMC device while you are working in Vision.

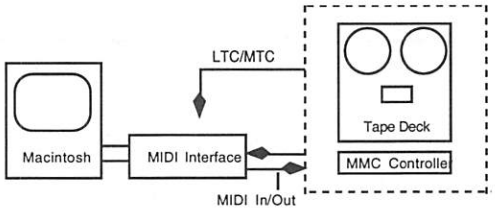
The AV Controls application requires:

- Macintosh with minimum 2Mb RAM and a hard disk.
- System 6.05 or higher
- OMS version 1.2 or higher

Hardware Installation

Make sure your MMC hardware is installed properly, according to the operations manual for each hardware device, and the following suggestions:

1. **Connect the MIDI in and MIDI out from your MMC controller to your MIDI interface.**
2. **Connect timecode out from your deck to the SMPTE ltc in (Longitudinal Time Code) on both the MMC controller and the MIDI interface (may require a Y-cable).**
3. **Make sure you are using a tape that is striped with SMPTE timecode.**



MMC Hardware Configuration

Note: If your MMC controller converts LTC to MIDI Timecode, and you wish to use it instead of the MIDI Interface for converting timecode, follow the connection instructions provided with your MMC controller.

Software Installation

Installing the OMS Extension

OMS version 1.2 or later must be installed before using AV Controls. If you are not familiar with OMS, please refer to the OMS manual included in your Vision package.

Installing AV Controls

To install AV Controls and the required AV OMS Driver:

1. **Run the AV Installer on the AV Installation disk.**
   A dialog box appears.
2. **Click the Easy Install button.**
3. **Restart your computer.**

Note: The Installer copies the AV Controls program onto your hard disk and put the AV OMS Driver in the OMS folder (located in the System folder). The AV OMS Driver allows one or more applications to send device control commands to MMC device(s). AV Controls will not control MMC devices if the AV OMS Driver is not properly installed.

To install AV Controls without using the Installer:

1. **Copy the file "AV OMS Driver" into the OMS Folder.**
2. **Copy the AV Controls application anywhere on your hard disk.**
3. **Restart your computer.**

To de-install AV Controls using the Installer:

1. **Run the AV Installer on the AV Installation disk.**
   A dialog box appears.
2. **Click the Custom button.**
3. **Select the AV OMS driver.**
4. **Hold down the option key. The Install button will say Remove.**
5. **Click the Remove button.**
6. **Restart your computer.**

Note: To disable device control software, without de-installing, take the AV OMS Driver out of your OMS Folder and restart your computer.

Important: If the AV OMS Driver is not properly installed in the OMS folder when you start your computer, a warning message will appear when you try to run AV Controls and the program will quit.

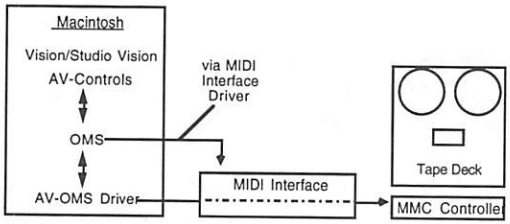
❑ Setting Up MIDI Machine Control

OMS Setup for MMC

AV Controls uses OMS to recognize the MMC device in your MIDI studio setup. When you control a MMC device from AV Controls, the AV Controls program sends a message to OMS, which in turn looks for the AV OMS Driver (in the OMS folder). The driver translates the message into device control commands for the MMC device.

This architecture allows you to control MMC devices from any program that is compatible with OMS and the AV-OMS driver (e.g. Vision or Studio Vision).

Currently, Opcode's AV-compatible applications (i.e. those that use the AV-OMS driver) include OMS Setup, Studio Vision 1.5 or later, Vision 2.0 or later, and AV Controls.

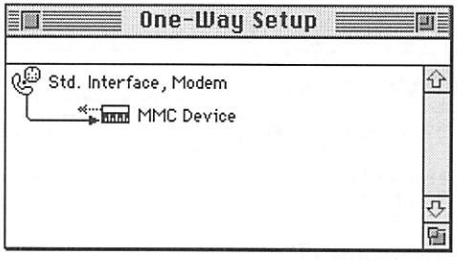


OMS Software Architecture

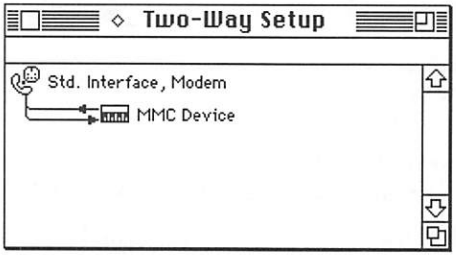
OMS Studio Setup

1. **Create an OMS Setup that shows to which MIDI Interface port(s) any MMC devices are connected.**

In a one-way setup, only the MIDI Out cable is connected from the MMC Device (see below).



In a two-way setup, both MIDI In and MIDI Out cables are connected to the MMC Device (see diagram). A two-way setup may be used for two reasons: 1) to get MTC directly from the MMC device (in which case Sends MTC should be checked in MIDI Device Info window); or 2) if you are using closed loop communications (see the following paragraph).

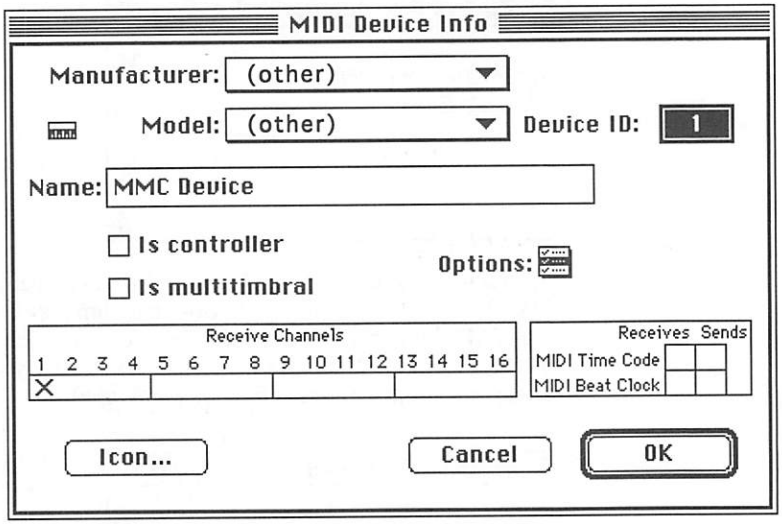


OMS Two-Way Studio Setup

MMC communications default is set to "open loop" regardless of whether you are using a one-way or two-way studio setup. Open loop communications refers to the command structure between AV Controls and the MMC device. In open loop communications, commands are sent from the controlling program (AV Controls or Vision) to the MMC device without requiring a response from the device.

You may also set MMC communications to closed loop ("Using AV Controls for MIDI Machine Control" on page 400). Closed loop communications requires a two-way studio setup, and may be used to monitor the MMC device location while locating, fast forwarding or rewinding, or to use the Test Device option. If you are using closed-loop communications, the program will issue commands to the device, then wait for the device to perform the desired function (cue, play, record, etc.). If you are not familiar with the need for closed loop communications, we recommend that you use open loop.

1. **Choose New Device from the Setups menu to add the MMC device to your current studio setup.**
   The MIDI Device Info window will appear.



MIDI Device Info Window

2. **Enter any name for the device.**
3. **From the Options pop-up menu, choose Uses MIDI Machine Control.**

Options Menu in MIDI Device Info Window

4. **If the device outputs MIDI Timecode, check the Sends MTC box.**
5. **Set the Device ID in this window to match the ID of the MMC device.**

Note: in order to set the Device ID to "0" you need to check the Is multitimbral box; otherwise, OMS will set the Device ID to match the channel of the device.

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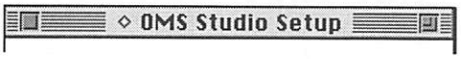
1. **Click OK.**

2. **Save the current OMS setup. If this is not the current setup (i.e. there is no diamond next to the name in the title bar), choose Save and Make Current from the File menu.**

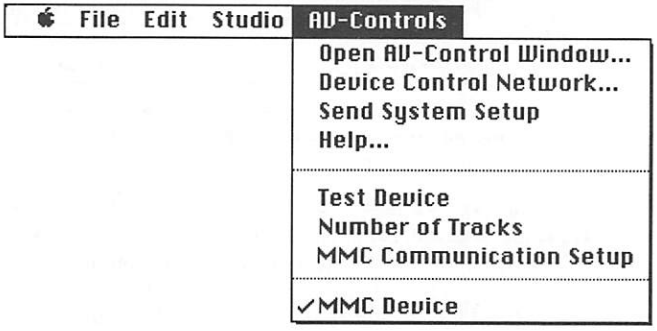


Current Studio Setup

The new studio setup is now displayed in the Studio Setup window. Do not quit the OMS Studio Setup application; continue to the next section.

AV Controls Menu

Note that, because the AV OMS Driver is installed, a menu labeled AV Controls appears in the menu bar.



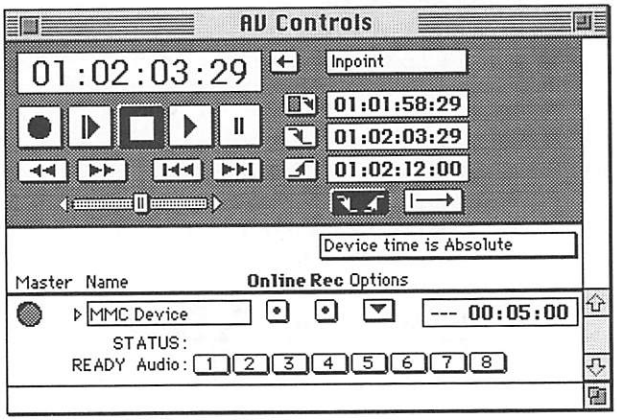
If the AV OMS driver was properly installed, there will be a list of all MMC devices included in the Studio Setup at the bottom of this menu.

The Open AV-Control Window command at the top of the menu will launch the AV Controls application.

The Device Control Network command re-initializes the AV OMS driver. This command is performed automatically when you change your studio setup. If you are experiencing a communication problem with one or more of your MMC devices, or the devices don't show up in the AV Controls menu, you should perform this command (by choosing from the menu).

The Transport Window

1. **While the OMS Studio Setup application is still running, choose Open AV-Control Window from the AV Controls menu.**
   This will display the Transport window.



Transport Window - One MMC Device

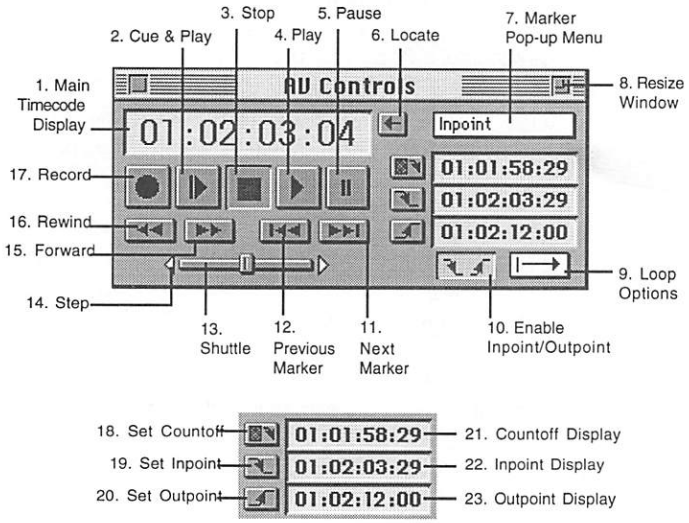
The Transport window is the main AV Controls window. The top half of the Transport window is the Device Control section; the bottom half is the Device Information section. The resize window button in the upper right corner toggles the size of the window in order to display the Device Control section only or both the Device Control and Device Information sections.

When the Transport window is open, the Transport window selection in the AV Controls menu also toggles the size of the window.

The device information section in the bottom half of the window will display information for each device.

Device Control

Transport controls and timecode displays perform the following functions:



1. **Main Timecode Display**

   Displays current timecode location of the MMC device when in play, fast forward, or rewind. Displays marker point location when you select a marker from the marker pop-up menu. Displays a timecode value that you enter to send the device to a specific location.

2. **Cue and play button**

   Sends device to countoff location (cue point) and then into play. If timecode displays are turned off (Enable Inpoint/Outpoint button) the cue and play button functions only as a play button.

3. **Stop button**

   Puts device in stop.

4. **Play button**

   Puts device into play from its current location. Note that this is different from the play button in Vision, which plays from the number in the counter.

5. **Pause button**

   Puts device in pause.

6. **Locate button**

   Sends device to location as shown in the Main Timecode Display.

7. **Marker pop-up menu**

   Displays the names and timecode locations of all the markers you have created. There will always be at least three markers in this menu: the current Countoff, Inpoint, and Outpoint.

8. **Resize Window button**

   Toggles size of window to display Device Control only or Device Control and Device Information.

9. **Loop Options button**

   Only active when timecode displays are ON. There are four loop options (from top to bottom): play from countoff to outpoint then pause; play from countoff and keep playing; play from countoff to outpoint, re-cue to inpoint and pause; and continuous loop from countoff to outpoint.

10. **Enable Inpoint/Outpoint button**

    Toggles to enable and disable the inpoint and outpoint displays. Disabling timecode displays allows you to control the device as if no inpoint or outpoint values were set. When the timecode displays are OFF, the cue and play button is identical to the play button.

11. **Select Next Marker**

    Sends the device to the location of the first marker with a time later than the current timecode location.

12. **Select Previous Marker**

    Sends the device to the location of the first marker with a time earlier than the current timecode location.

13. **Shuttle bar**

    This is a variable speed search. Not available for most MMC devices.

14. **Step arrows**

    Clicking on these arrows will cause the device to step one frame in the forward or reverse direction. Not available for most MMC devices.

15. **Forward button**

    Puts device in fast forward.

16. **Rewind button**

    Puts device in fast rewind.

17. **Record button**

    Puts device into record, if device is a recorder and record enable is on (see Device Information).

18. **Set Countoff button**

    Sets the countoff position (or preroll duration). The default minimum preroll is five seconds.

19. **Set Inpoint button**

    Allows you to set the current inpoint. Clicking the inpoint set button will capture the timecode value in the Main Timecode Display as the inpoint.

20. **Set Outpoint button**

    Allows you to set the current outpoint. Clicking the outpoint set button will capture the timecode value in the Main Timecode Display as the outpoint.

21. **Countoff display**

    Displays current countoff value. You may change the value by clicking and dragging any of the numbers within the display.

Note: The countoff display may be set in the Preferences window to display either absolute countoff timecode position (equal to inpoint position minus preroll) or relative countoff timecode position to the inpoint (preroll duration).

---

22. **Inpoint display**

    Displays the current inpoint. You may change the value by clicking and dragging any of the numbers within the display.

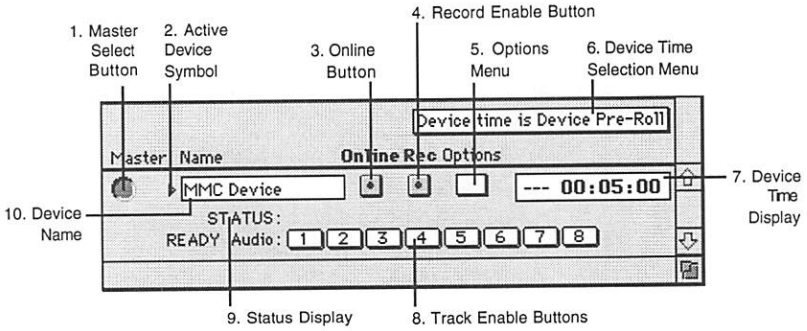
23. **Outpoint display**

    Displays the current outpoint. You may change the value by clicking and dragging any of the numbers within the display.

Note: you can control your MMC device by clicking device control buttons in the Transport window, or with shortcut keys on the keyboard. You can view a list of shortcut keys by choosing "Help..." from the AV Controls menu.

Device Information

The Device Information section of the Transport window displays all current information for each MMC device connected to your system. The scroll bar on the right side of the window becomes active when you are controlling more than one device.



1. **Master Select Button**

   If you have one MMC device, it will always be the master. If you have two or more devices, you can select which will be the master by clicking the master select button next to the device. The master is the device whose timecode appears in the Main Timecode Display. The master always has offset of 00:00:00:00; markers and locations are always relative to the master timecode.

Note: AV Controls will let you control multiple devices, however this feature may not be used as a substitute for chase lock control hardware. The devices will not be synchronized.

---

2. **Active Device Symbol**

   The small triangle to the left of the device name shows which device is currently selected. The options in the middle section of the AV Controls menu pertain to the selected device. The selected device is also displayed as the checked device in the AV Controls menu.

3. **Online button**

   Turns the device online for control. When the online button is depressed, you can control the device. When it is not depressed, you cannot control the device. Note: if there is no device connected, clicking the Online button into the off position will cause the transport control buttons to stop blinking.

4. **Record Enable button**

   This button is a safety feature that helps ensure that you do not inadvertently record over previously recorded material when you do not want to. When depressed, you can put the device into record by clicking the Record button in the top of this window.

5. **Options menu**

   The items in the Options menu are also available in the AV Controls menu, and pertain to the selected device.

   - Test Device

     Verifies that the device is online.

   - Number of Tracks Opens the Number of Tracks dialog

     Lets you set the number of audio (and video) tracks for your device.

   - MMC Communications Setup

     Allows you to set open loop or closed loop communications, or suppress MMC transport commands (see "Open Loop/Closed Loop Communication Setup" on page 402).

6. **Device Time Menu**

   Pop-up window with three choices: Absolute, Offset, and Device Preroll. The Device Time setting lets you select which of the three options you would like displayed in the Device Time display next to each device.

   - Absolute

     Displays the actual timecode location of the device.

   - Offset

     Displays the timecode offset of each device's current location from the current location of the master device. The master device offset will always be 00:00:00:00; the offset of other devices can be positive or negative depending on whether the device is ahead of or behind the master.

   - Device Preroll

     Displays the current minimum preroll for each device. You may set the minimum preroll by clicking and dragging any of the numbers in the preroll timecode display. Default preroll is five seconds (00:00:05:00).

7. **Device Time Display**

   Displays the currently-selected device time (absolute, offset, or device preroll) for each device.

8. **Track Enable Buttons**

   The number of Track Enable buttons displayed for each device depend on the settings you have stipulated in the Number of Tracks window for that device.

   Each Track Enable button is a toggle. Click once to turn on, and the button will be highlighted. Click again to turn the track off.

9. **Status Display**
   Shows the current status of the device. The status display is included for general information, and will not affect system performance.
10. **Device Name**
    Every Device can be given a 31-character name. If the system is unable to determine the name of a device, it will be "My Device".

❑ Using AV Controls for MIDI Machine Control

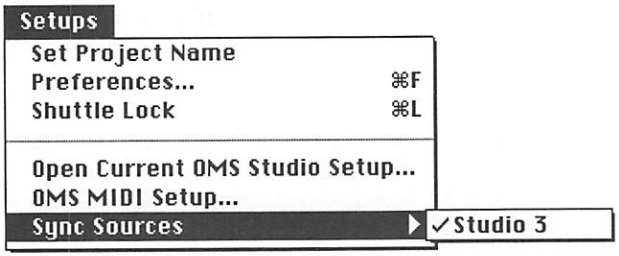
As a stand-alone application, AV Controls turns your Macintosh into a front-end controller for your MMC device(s).

AV-Controls Setup

Sync Source Configuration

The Sync Sources list in the Setups menu lets you designate the source of MIDI sync/MTC for AV Controls. The Sync Sources pop-up menu will display all sources of MIDI sync in your system (as derived from your current OMS setup).

For MMC, the sync source should be a MIDI interface, a timecode converter, or the device itself if it can convert timecode to MTC.

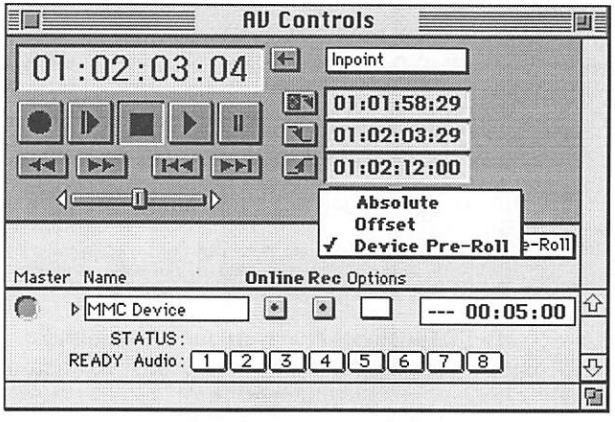


Sync Sources

Transport Settings

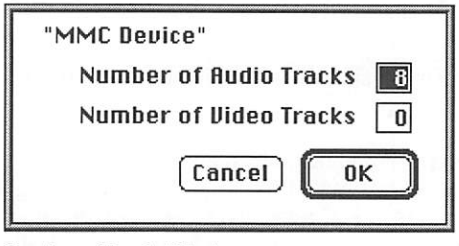
Make the following transport setting changes in the Transport window, if appropriate:

1. **To change the name of your device, type a name in the name window.**
2. **Make sure the Online button is in the depressed position (default).**
   When the device is online, it will respond to transport control commands.
3. **Choose Device Preroll from the Device Time pop-up menu.**
   This will display the preset preroll time for the device in the Device Time Display. Set the preroll time to an appropriate value for your device. Default is five seconds (00:00:05:00).



Device Time Pop-up

4. **Choose Number of Tracks from the Options pop-up menu and set the number of audio (and video) tracks for your device.**



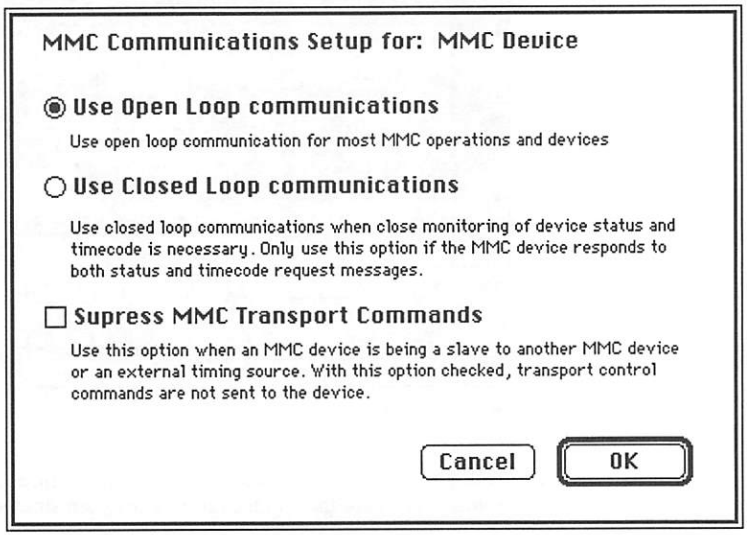
Number of Tracks Window

Note: in some cases, multiple devices function like one device with multiple tracks.

Open Loop/Closed Loop Communication Setup

The communications setup determines how the controlling program (AV Controls or Vision) will talk to the MMC device.

1. **To change the communication setup, choose MMC Communication Setup from the Options pop-up in the Transport window or from the AV Controls menu.**


MMC Communications Setup for: MMC Device
Use Open Loop communications
Use open loop communication for most MMC operations and devices
Use Closed Loop communications
Use closed loop communications when close monitoring of device status and timecode is necessary. Only use this option if the MMC device responds to both status and timecode request messages.
Supress MMC Transport Commands
Use this option when an MMC device is being a slave to another MMC device or an external timing source. With this option checked, transport control commands are not sent to the device.
Cancel
OK

MMC Communications Setup Dialog

Open loop is the standard, in which the program simply issues commands to the MMC device.

Closed loop communications may be used when you need to monitor device status more closely (while locating, fast forwarding, or rewinding) or if you wish to use the Test Device option to verify that the MMC device is online and communicating properly. Closed loop communications requires a two-way studio setup (see "OMS Studio Setup" on page 390).

Suppress MMC Transport Commands may be used when you do not want transport control commands to be sent to your MMC device (e.g. if it is set up as a slave to another device or another timecode source). Suppress MMC Transport Commands does not disable record abilities (punch in and punch out).

Device Control

With AV Controls you can control your MMC device by clicking device control buttons in the Transport window, or with shortcut keys on the keyboard. You can view a list of shortcut keys by choosing "Help..." from the AV Controls menu.

For a description of transport control buttons, see "The Transport Window" on page 394.

If you are using a closed-loop setup, when you click any transport control button, the button will begin blinking as the command is sent to the device. Once the device has received the command, the button will stop blinking and become highlighted. If you are using an open-loop setup, the transport buttons will blink until valid timecode is received.

Note: the shuttle (scrub) and step (one frame forward or backward) commands do not function for most MMC devices.

Inpoint/Outpoint/Countoff

If the Enable Inpoint/Outpoint button is activated (in the depressed position), the Cue and Play button (or the space bar) will send the device to the current inpoint-minus-preroll position and then play.

If the Enable Inpoint/Outpoint button is not activated, the Cue and Play button functions just like the Play button, and looping options are disabled.

Note: if the Enable Inpoint/Outpoint button is not activated, the inpoint, outpoint, and countoff timecode displays will be grayed.

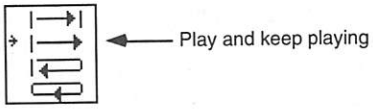
Locate

The locate button will send the device to the timecode value displayed in the Main Timecode Display.

While you are controlling your device, the value in the Main Timecode Display reflects the current position of the device.

To send the device to a specific timecode location:

1. **Make sure that the Play from inpoint and keep playing setting is displayed in the loop options pop-up menu box. Loop options are described in the next section.**



2. **Enter a new timecode value in the Main Timecode Display.**
3. **Click the locate button. The device will search to the new location.**

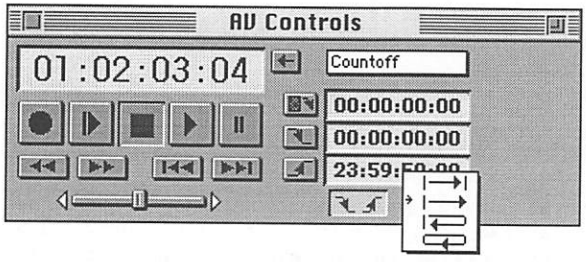
Note: if the device is in play when you locate, it will search to the new countoff position (marker point minus preroll) and continue to play. If the device is in pause or stop when you locate, it will search to the exact timecode location and pause.

The locate feature is activated automatically when you select Next Marker or Previous Marker. The Next Marker or Previous Marker commands will send the device to the timecode location of the marker that is either immediately before or immediately after the value in the Main Timecode Display.

If you have selected Auto Locate from Markers Menu in the Preferences window, then your device will automatically search to the marker location when you select a new marker from the Marker Pop-up Menu.

Looping

The four loop options apply whenever the device is in Play and reaches the outpoint.

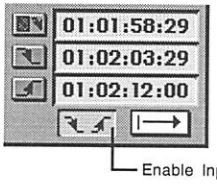

AV Controls
01:02:03:04
Countoff
00:00:00:00
00:00:00:00
23:59:
Loop Option 1: Play from countoff to outpoint, then pause.
Loop Option 2: Play from countoff and keep playing.
Loop Option 3: Play from countoff to outpoint, re-cue to inpoint and pause
Loop Option 4: Play in continuous loop from countoff to outpoint.

Loop Options Pop-up Menu

To use looping:

1. **Set inpoint and outpoint values by entering them into the inpoint/outpoint timecode display or searching to the desired location and clicking the inpoint/outpoint set button. The inpoint should always be set before the outpoint.**

Note: if inpoint and outpoint timecode displays are gray, click the Enable Inpoint/Outpoint button to activate the displays.



2. **Select the desired loop option from the pop-up menu.**
3. **Click the Cue & Play button.**
4. **To cancel, click Pause.**

Recording

To activate the record function from AV Controls:

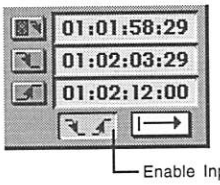
1. **Record-enable your device by clicking on the Rec button in the Device Information section of the Transport Window.**
2. **Record-enable the tracks onto which you wish to record by clicking on each track button (highlighted = enabled).**
3. **If the in/out points are enabled (Enable Inpoint/Outpoint button highlighted), start recording by clicking the Record button or pressing the Tab key. The device will position at the countoff, roll, and punch in at the inpoint, out at the outpoint.**
4. **If the in/out points are not enabled, the device will begin recording from its current location.**

Note: While the device is playing, you may punch record on any enabled tracks by pressing the Record button. While recording, you may punch out by pressing the Record button.

Striping a tape with SMPTE

You may control your MMC device with AV Controls while striping a tape with SMPTE timecode by disabling the inpoint and outpoint.

1. **Click the Enable Inpoint/Outpoint button in the Transport window to disable the inpoint and outpoint (the displays should become gray).**



2. **Use the transport control buttons (play, stop, etc.) as you normally would on the front panel of your device.**

Note: While striping with a MIDI Interface, you will still see timecode in the Transport window display.

Markers

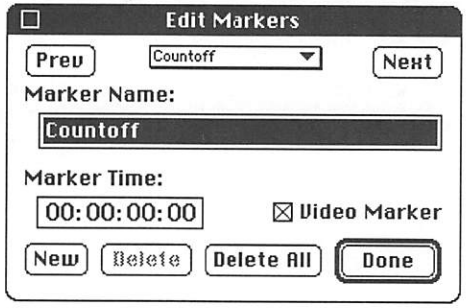
A marker list created in, or imported into AV Controls can be used from within AV Controls, printed, or exported as a MIDI file for use in Vision, or Studio Vision.

1. **Open the Transport window by choosing Transport Window from the AV Controls menu.**
2. **Open the Edit Markers window by choosing Markers Window from the AV Controls menu.**

Notice that in both windows there is a pop-up menu which contains your current marker list. There will always be at least three items in your marker list: the Countoff, Inpoint, and Outpoint. The timecode values associated with these three markers will change dynamically when you change the values in the Countoff, Inpoint, and Outpoint displays in the Transport window.

The timecode values of all other markers will not change unless you specifically edit the values. To create new markers:

1. **Position the device at the desired marker location.**
2. **In the Edit Markers window, click New. Note that markers may be created while the device is paused, or on the fly.**



Edit Markers Window

3. **Choose Insert Marker from the Edit menu (or type command-;) to bring the current timecode location into the Marker Time box; or type the desired timecode value into the Marker Time box.**
4. **Type a name for the new marker in the Marker Name box. If you do not type a new name, its name will be "Untitled #".**

Note: If the Edit Markers window is not open, choosing Insert Marker from the Edit menu (or typing command-semicolon) will open the Edit Markers window and bring the current timecode location of the MMC device into the Marker Time box.

5. **Click Enter to enter the marker information into the marker list.**
6. **To create a new marker, click New.**

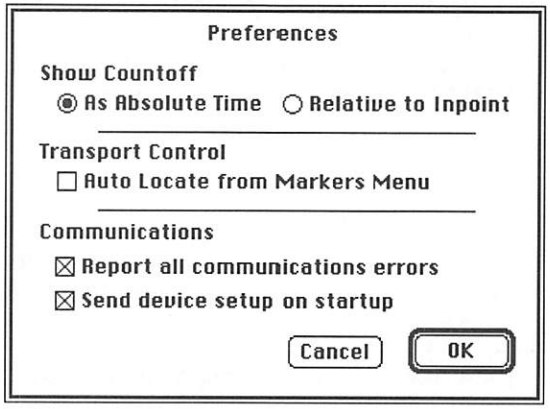
Note: While a current marker is displayed, do not change the marker name or marker time unless you wish to edit the name or time of the current marker. To enter a new marker, click New then enter the new name and time.

You may create a series of markers in real time, without naming each marker as follows:

1. **Put the device into play.**
2. **Type command-semicolon at each marker point as the device is playing.**
3. **When finished, put the device in stop then name the markers.**

Automatically Locating Markers

If the Auto Locate from Markers Menu box is checked in the Preferences window, AV Controls will send the device to the marker location automatically when you select a marker from the pop-up marker list in the Transport window.



Preferences Window

With auto locate enabled, if the device is in pause or stop when you choose a new marker, it will search to the exact marker point and pause. If your device is in play when you choose a new marker, the device will search to the marker countoff position (marker point minus preroll) and continue to play.

Importing, Exporting, and Printing Marker Lists

Marker lists that you create in AV Controls or Vision/Studio Vision may be interchanged because they are saved as MIDI files.

The Import MIDI File and Export MIDI File commands in the File menu can be used to open a marker list which was previously saved as a MIDI file and save a marker list as a MIDI file, respectively.

Technical Note: AV Controls will import any "type 6" marker events in the MIDI file.

The Copy MIDI File and Paste MIDI File commands in the Edit menu can be used in the same way, except the un-named MIDI file resides on the clipboard. This is a convenient way to get markers from AV Controls to Vision/ Studio Vision.

To print your current marker list from AV Controls:

1. **Choose Set Project Name from the Setups menu, enter a name, and click OK. This name will appear on the top of your printed marker list.**
2. **Choose Print from the File menu.**

❑ MIDI Machine Control with Vision or Studio Vision

Vision and Studio Vision use the AV OMS Driver to send device control commands to MMC device(s), so that the devices will "follow" your MIDI sequence.

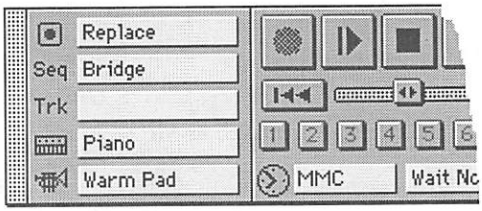
Setup

This section describes how to set sync sources and SMPTE offset so they are compatible for both Vision/Studio Vision and AV Controls.

1. **Launch Vision.**
2. **From the Vision Setups menu, choose Open AV Controls.**

Sync Settings

There is a sync setting called **MTC/Machine Control** in the Vision sync settings (abbreviated as "MMC" in the Control Bar). This setting is only available when the AV OMS Driver is active in the OMS folder.



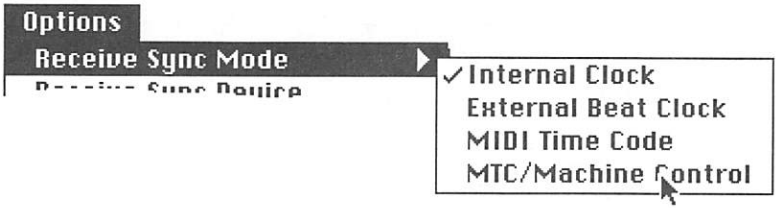
Vision Control Bar

Using the MMC mode for device control is similar to using the Timecode mode in that Vision sequences are recorded and played synchronized to MTC, which can come from a MIDI Interface or any device that converts audio timecode (LTC) to MTC.

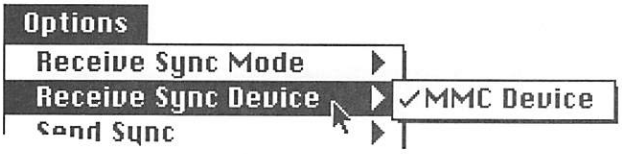
The MMC setting is designed for controlling tape decks and other external devices. This setting turns Vision's transport commands (play, stop, record, locate, locate to marker) into commands that control the MMC device.

In MMC mode, when you play a sequence, Vision will wait for the MMC device to cue and play before playing the sequence.

3. **In the Vision Options menu, set the Receive Sync Mode to be MTC/Machine Control, and the Receive Sync Device to be your sync source.**
   When you change the Receive Sync Device in AV Controls, the change will be reflected in Vision.



Receive Sync Mode



Receive Sync Device

SMPTE Offset

Once you have specified the appropriate SMPTE offset in Vision, your device(s) will "follow" the current sequence location.

The timecode offset and the meter and tempo tracks for each Vision sequence will determine the relationship between beat-and-bar positions and timecode locations on tape. Bar one, beat one will be the exact SMPTE offset of the sequence.

The offset will correlate the beginning of your sequence (bar one, beat one) to any timecode location on the tape in your device. The offset must be set for each new Vision sequence or new tape.

When you put a Vision sequence into play, the AV OMS Driver tells the MMC device to play from the SMPTE Offset. So if the offset is 00:00:00:00, the device will try to locate to this point and play.

Since most devices require a pre-roll, offset locations should be positioned well away from the beginning of a tape.

To set the SMPTE Offset:

1. **Open a new Vision Tracks window and make sure the Info strip is open.**
2. **With the device control buttons in AV Controls or Vision, find the timecode location at which you want the sequence to start. The current SMPTE location is displayed in the counter in the Vision control panel.**
3. **Enter the timecode location as the offset timecode position in the Tracks window, or click on the word OFFSET in the Tracks window; the SMPTE time shown in the control bar will become the offset.**

Device Control

The Vision transport commands which can be used for MMC include play, pause, stop, locate, and record. You may open the AV Controls Transport window to also use forward and rewind when not working with a sequence.

When Vision is set to MMC mode, the AV OMS Driver causes the device(s) to follow the sequence during play, record, looping, go to marker, and go to time-code location/auto-locator point.

In MMC mode, when you click play (or press space bar) in Vision, the MMC device will cue to the inpoint (as determined by the SMPTE offset), then play.

Inpoint/Outpoint/Countoff

Vision allows you to specify the inpoint, outpoint, and countoff in musical time. These values are translated into SMPTE times by AV Controls, and the SMPTE times are used to control the MMC device.

The inpoint for the MMC device will be the Vision inpoint, adjusted by the SMPTE offset. The countoff will be determined by the longest of (a) the Vision countoff, or (b) the preroll of the MMC device (the longest preroll if you are using more than one MMC device).

Note that when you change the inpoint, outpoint, and countoff values in Vision, they are reflected in AV Controls. However, changing these values in AV Controls will not change the values in Vision.

Looping

With the loop button highlighted, both the sequence and the MMC device will loop from the sequence inpoint to the sequence outpoint. However, Vision will not remain in record mode while looping. External tracks can be recorded on the first pass, and will play on subsequent passes.

In MMC mode, Vision will not record MIDI or digital audio when in loop record (loop button highlighted).

Searching to Counter Location

In MMC mode, issuing the play-from-beginning command in Vision causes both the sequence and the MMC device to cue, then play. The sequence will wait for the device to cue before playing. Pressing enter will send the MMC device to the counter location.

Stopping

In MMC mode, when a sequence which was playing ends, and Vision is not recording (Vision's record button is not highlighted), the MMC device will also stop at the end of the sequence.

Similarly, when "Stop at punch out" is checked (in the Vision Setups menu), both Vision and the MMC device will stop at the punch out point.

Markers

While Vision and AV Controls are both running and Vision is in MMC mode, markers created in Vision will be displayed in the AV Controls marker pop-up menus. However, if you change the marker information in AV Controls, the changes will not be reflected in Vision.

When you change sequences in Vision, the markers and SMPTE offset will be updated automatically in AV Controls.

Markers in Vision will be displayed in beat-and-bars or timecode format. The same markers will be displayed in AV Controls in timecode format.

Vision maintains a set of markers for each sequence in the meter track.

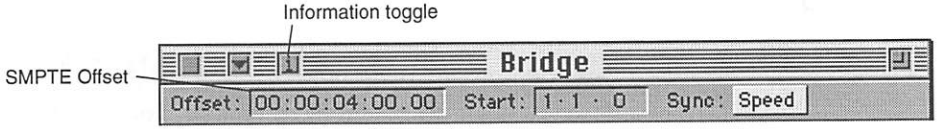
Scoring to Tape

This section describes the processes of scoring to music on tape. To score a sequence to tape:

1. **Make sure your tape has been striped with valid timecode, that the timecode is being read by Vision, and that the MIDI sync settings in Vision and AV Controls are set correctly.**
2. **Make sure the device is online (i.e. the online button in the AV Controls Transport window is depressed) and that you can control the device from the Vision control panel.**
3. **Position the tape to the location at which you wish to start the sequence.**

The timecode location in the Vision control bar should match the current tape position. Put the device into play by pressing the play button in AV Controls. This will allow the device control software to read the timecode from the device, and should update the number in the Vision control bar.

4. **Open a new Tracks window and, if necessary, click the Information toggle so that you can see the offset value.**
5. **Set the SMPTE offset to be the starting timecode value.**



Vision Offset Field

6. **Record select a track in the current sequence.**
7. **Set the metronome if you want a click.**
8. **Choose a record mode (Replace or Overdub). Set the Punch Toggle if you are punch recording.**
9. **Set a countoff, if you want one.**
10. **Use loop mode if you want to rehearse a section repeatedly.**
11. **Click the Record button or press the tab key.**
12. **Create music (if using a preroll, wait for the tape to get to inpoint).**
13. **Play the sequence by clicking the play from inpoint button.**

    The sequence will cue as the device searches to its countoff position (inpoint minus preroll). The sequence will wait for the starting timecode value as the device plays through its preroll. At the inpoint, the sequence will start. You may adjust the sequence offset if you want the sequence to start earlier or later in relation to the MMC device inpoint.

Recording to Tape

You can record a sequence to tape using the record commands in AV Controls. The following procedure assumes that you are using a tape that has been striped with valid SMPTE timecode.

The AV Controls Transport window must be open in order to record to tape from Vision or Studio Vision.

1. **In the AV Controls Transport window, click the record enable button, and enable the audio track(s) onto which you wish to record the sequence. If timecode is on an audio track, do not record over the timecode.**

Note: In order to record, the Transport window must be open, the device must be record-enabled (Rec button highlighted), and the destination track(s) must be enabled (highlighted).

If the Transport window is open, the MMC device is record enabled, and one or more tracks are enabled in AV Controls, a small tape deck icon will appear in the Record Mode pop-up in Vision's Control Bar indicating that when you choose the record command in Vision, the tracks will be recorded on the device:

2. **Put Vision in Internal mode and play the sequence to set audio level for recording.**
3. **Put Vision in MMC mode.**
4. **Click the Record button in the Vision control bar.**

   The device will cue to its countoff position, then the device and the sequence will begin playing. The device will punch into record at the inpoint and out at the outpoint.

MMC with Non-Opcode Software

AV Controls can be used with non-Opcode sequencing software for two purposes: remote device control, and working with marker lists.

For remote control, put your sequencer into SMPTE sync mode and use AV Controls as a remote controller for your device, as outlined in the Device Control section of this manual.

If your sequencer can export marker events as a MIDI file with text events, they can be imported to AV Controls as markers.

APPENDIX B: Glossary

This appendix contains definitions and descriptions of musical and MIDI terms. There are some terms that you should know before using Vision—these are in *Getting Started with Vision.*

❑ Aftertouch (Pressure) Events

Some keyboards offer Aftertouch (which is sometimes called pressure). *Aftertouch Events* measure how hard you push on a key after you initially strike it, but before you release it. There are two types of aftertouch events—Channel aftertouch and Polyphonic aftertouch. Channel aftertouch affects all notes on a channel and Polyphonic aftertouch provides separate aftertouch control for each pitch.

❑ Attack Velocity

This is a velocity event type. See "Velocity" on page 423.

❑ Capturing

Capturing is a process that "plays" the selected sequence into a new track or sequence. Capturing creates a chronological stream of events—all looped data is unlooped as if it were played in real time. Subsequences are also played into the new track as if you played them in real time.

Channel Number

Each MIDI message contains a *channel number.* A single MIDI cable can carry 16 channels of information. Assigning channel numbers to separate MIDI performances ensures the correct instruments will play. When a device receives a MIDI signal, it looks at the channel number. If the device is set to *receive* that channel, it responds to the signal. Otherwise it ignores the signal.

Controller Events

A controller event is a type of MIDI event that describes some controller setting. You can use controllers to set modulation, pedal foot switches, and MIDI volume, to name a few items.

Some controllers are named for a device (like breath controllers and foot controllers); others are named for effects like volume and pan.

Events

Each message in a MIDI message is called an *event.* Vision also has several types of non-MIDI events used for special purposes.

Fader Events

These events are not normal MIDI events—they are instructions Vision uses to control the faders in the Faders window. Faders, in turn, control MIDI events.

Fine Controls

For controller numbers 0-63, the display of the control value depends on the setting of the Fine Control check box in the Preferences dialog box (see "Fine Controls" on page 378). If this is checked, Vision interprets controller numbers 32-63 as fine tuning controllers 0-31, respectively. Each increment of the "coarse" controllers 0-31 counts as a change of 128—each increment of the "fine" controllers 32-63 counts as a change of 1. Combining the two results in a range of 0-16383, which is the range of values displayed for all controller numbers from 0-63. You may not find a lot of instances where you need to use fine controls. In fact, many synthesizers do not support this mode.

❑ Galaxy™

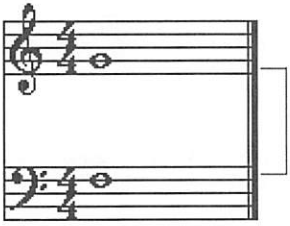
Galaxy is a universal patch librarian that can store data from any MIDI device with system exclusive capabilities. Galaxy and Vision form a dynamic link with each other—patch names in Galaxy bundles can be displayed in the Vision Names window. If you rename a patch (or rearrange a bank of patches) in Galaxy, it will be automatically updated in Vision. If you have Galaxy, see the Galaxy manual for more information. In this manual, see *Chapter 20: The Names Window*.

❑ Grand Staff

The grand staff is simply two staves, consisting of a treble clef and a bass clef.

If a track contains mostly low notes, Vision will notate the track in a bass clef. If a track contains mostly high notes, Vision will notate the track in a treble clef.

If the track contains both high and low notes, Vision will use a grand staff. This criteria is based on two cutoff points—if the track contains notes higher than F above middle-C *and* it contains notes lower than G below middle-C, Vision will use a grand staff.



❑ Instruments

Notes and other MIDI data are not assigned directly to specific MIDI channels—instead, they're assigned to *Instruments*, which are in turn assigned to MIDI channels. You can name Instruments so that you can refer to your devices by any name. You can layer several MIDI channels on one Instrument so that each note in your sequence plays several devices (or MIDI channels), and you can transpose the pitch or scale the velocity of any Instrument.

❑ MIDI Controllers

MIDI Controllers apply to a wide variety of information types. There are 122 different controllers (numbered 0-121), which can be set to values between 0 and 127.

❑ Multi Track

This is a track that has more than one Instrument assigned to it.

❑ Note Events

When you strike a key on your MIDI keyboard, it sends a *Note On* MIDI message. When you release the key, your keyboard sends a *Note Off* message. A **Note Event** is the combination of these two messages. It contains the note that was played, the velocity with which it was played, and how long the note lasted.

❑ Part

Most of the time, each Vision track will constitute one part. A part is designed for one instrumentalist to read and play. If you are printing your music with the intention of giving it to musicians to play, then you will probably be printing separate parts.

Often, you will combine multiple tracks to create a single part. For example, you can combine a bass track with a melody line to create a single piano part, or lead sheet.

❑ Pitch Bend Events

If your keyboard is equipped with a pitch bend wheel, it will send *Pitch Bend* messages when you use the wheel. Pitch Bend messages range in value from -8192 to +8191.

❑ Player

Vision's Players are a way to play sequences simultaneously. Vision allows you up to 9 Players, therefore, you can have 9 sequences play simultaneously. Each player is like an individual sequencer, able to play a sequence regardless of what other players are doing.

A Player can play one sequence, and its "queue" can contain up to 16 sequences that are waiting to play if you're using Queue mode. See *Chapter 24: Players & Queue* for more information.

❑ Pressure

This is another name for aftertouch. See "Aftertouch (Pressure) Events" on page 417.

❑ Program Events

MIDI sound modules generally store a number of different sounds. Usually, you can set the playing sound by sending a *Program Change* event.

❑ Sequencer

As you know, you can record audio signals to create sound recordings. You can also record MIDI signals—this is called sequencing. Vision is a sequencer. It records your MIDI signals, lets you change them, and sends them to MIDI devices.

❑ Subsequence

A subsequence is a sequence that plays as part of another sequence. It is triggered by a subsequence event.

You can see subsequence events in Track Overview and List windows, where the name of the subsequence is displayed rather than the individual MIDI events. See *Chapter 8: Understanding and Using Subsequences* for more information.

❑ Switch Controllers

Controller numbers 64-69, 78 and 79 are known as "switch controls"; if they have values of 64 or greater, they are "on," and if they are 63 or less they are "off." (Controller number 78 and 79 are used by the Studio 3 footswitches.) Controller numbers 96 and 97, Data Increment and Data Decrement, are not shown with any value at all. All of the other controllers from 70-120 have values from 0-127.

❑ System

A system contains all the tracks that are selected and will be printed. A system can be one staff, if it contains one track with limited note range—or it can be many staves if many tracks are selected.

❑ System Exclusive (Sys Ex)

System exclusive messages are primarily used for information specific to one particular synthesizer, especially patch dumps or editing parameter changes. Originally, they were used to allow one synthesizer to edit the sounds of another identical model. Now, they make patch editors and librarians possible.

Every system exclusive message begins with a code which identifies a particular manufacturer. The rest of the message is up to that manufacturer—it may be any length at all. There are some codes which are reserved by MIDI itself for industry-wide extensions to MIDI such as MIDI Time Code and the Sample Dump standard.

Since System Exclusive messages are so general, Vision approaches them in a general way: you can record them and play them, and you can edit them using the hexadecimal number system. If you are not familiar with hex, you'll need to learn about it in order to edit them. Even if you don't know anything about sys ex messages, you can still record them (or import them from MIDI Files created by patch librarians) and play them back.

You can save system exclusive data in a standard MIDI file by exporting the sequence.

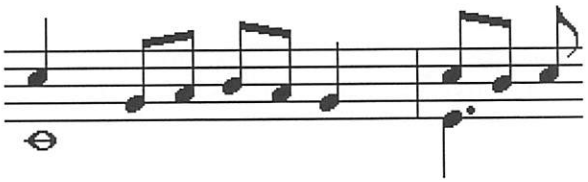
❑ Velocity

If your keyboard is velocity sensitive (most are), it will send an *Attack Velocity* number with each note on message. This shows how hard you hit the note (actually, it shows how *fast* you hit the note, but this is confusing to many people—it has nothing to do with tempo, only how fast you strike each key). The attack velocity stores the dynamic expression of your music.

Many keyboards also send *Release Velocity,* or how fast you release the keys. You can optionally record these velocities, but they are generally not considered important for capturing the feel of your music. To suppress Vision from displaying release velocities, see page 377.

❑ Voice

If there is more than one voice, it means that Vision has detected two or more distinct rhythmic patterns within the same track.

Several voices per staff are automatically created by Vision if there are overlapping rhythms within the Track. Whenever possible, the stems and ties will automatically point in opposite directions so they do not collide.

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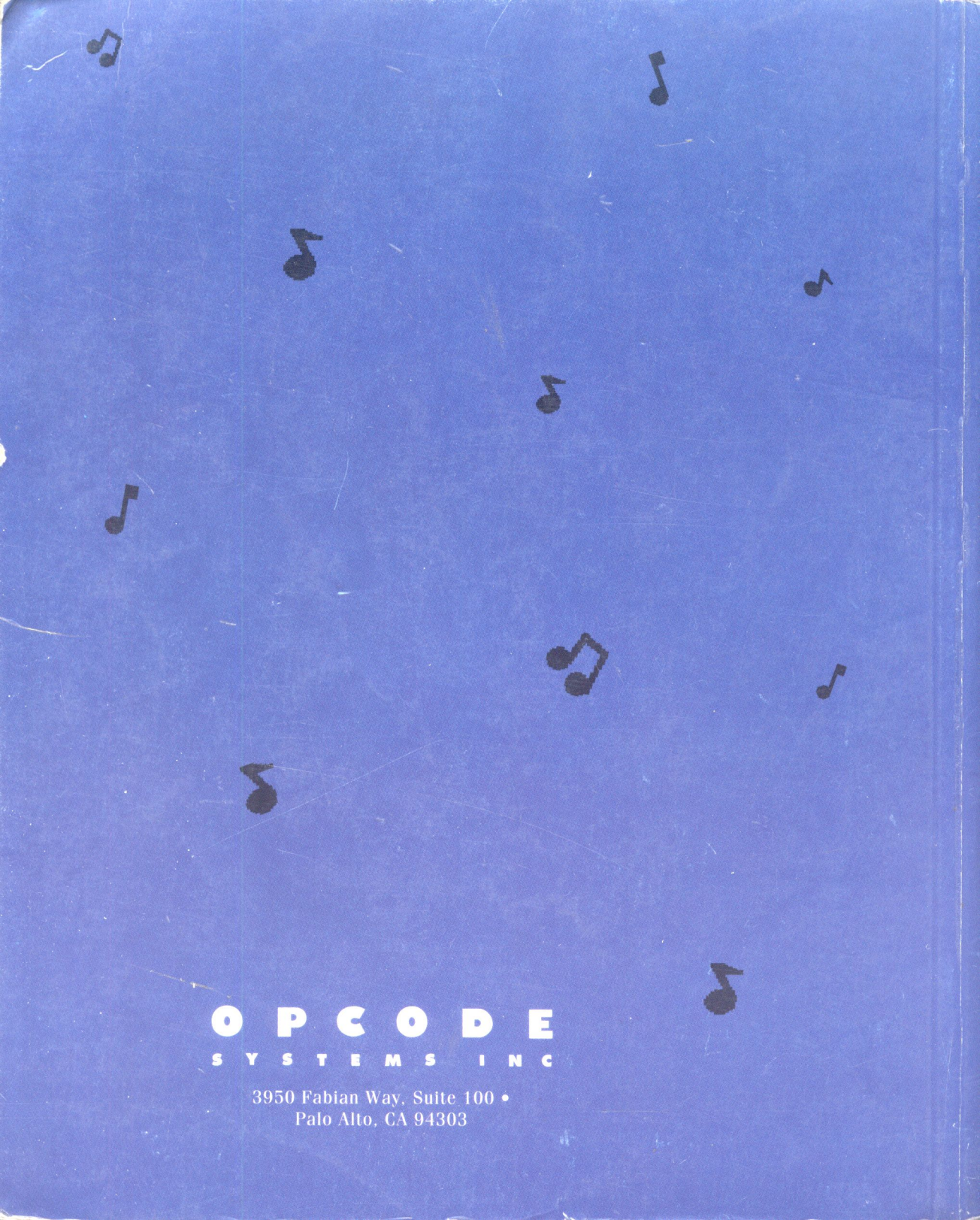

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SYSTEMS INC

3950 Fabian Way, Suite 100 •
Palo Alto, CA 94303